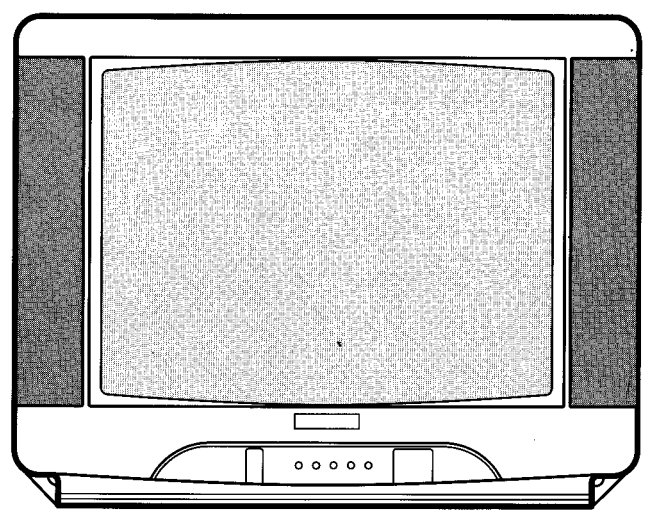
DAEWOO

Service Manual

Colour Television

CHASSIS : CP-330
PAL-SECAM SYSTEM

MODEL : DTX-14A1/20A1/21A1
14B1/20B1/21B1
20C1/21C1
14D1/20D1
2066/2166
2072/2172
2075/2195
UK : T140/T142 /T200/T202/T512



DAEWOO ELECTRONICS CO., LTD.

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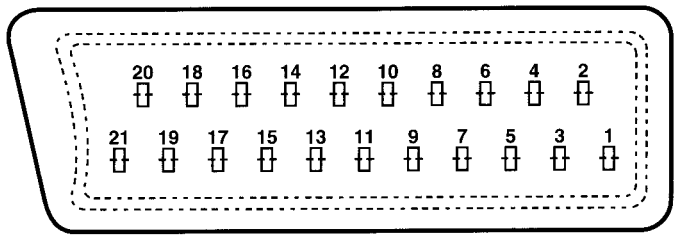
■ SPECIFICATIONS

<table>
<tr><th>Model</th><th>DTX-0000TF</th><th>DTX-0000TK</th><th>DTX-0000VA</th><th>DTX-0000TU</th></tr>
<tr><td>Receiving System</td><td>PAL-B/G</td><td>P/S-B/G,D/K
NTSC (AV)</td><td>P/S-B/G,D/K
SECAM-L/L'</td><td>PAL-I</td></tr>
<tr><td>Main Voltage</td><td colspan="4">230V AC 50Hz</td></tr>
<tr><td>Power Consumption</td><td colspan="4">69W Approx. (14 inch)
85W Approx. (20 inch and 21 inch)</td></tr>
<tr><td>Sound Output</td><td colspan="4">2.0W Approx. (at 60% MOD, 10% THD)</td></tr>
<tr><td>Antenna Impedance</td><td colspan="4">75 ohm unbalanced</td></tr>
<tr><td>Tuning System</td><td colspan="4">Voltage Synthesis Tuning System</td></tr>
<tr><td>Number of Program</td><td colspan="4">100 Programs</td></tr>
<tr><td>Reception Channel</td><td colspan="4">Refer to the TUNER description</td></tr>
<tr><td>Remote Control Unit</td><td colspan="4">With TEXT: R-22 or R-23
Without TEXT: R-25 or R-26</td></tr>
<tr><td>Screen Size (Diagonal)</td><td colspan="4">14": 340mm
20": 480mm
21": 510mm</td></tr>
<tr><td>Indication</td><td colspan="4">On-Screen Display
-Program No. (00-99) & Station Name
-Sleep (15-120)
-Mute & Volume
-AV
-Normal (Normal I, Normal II, Favourite)
-Picture menu (Contrast, Brightness, Colour, Sharpness, Tint (TK model))
-Timer Menu (Clock, On Time, Off Time)
-Preset Menu (Auto Search, Search, Fine Tune)
-Language (English, German, French, Spanish (DW167MN02) / English, French, Italian, Dutch (DW167N003))</td></tr>
<tr><td>Aux. Terminal</td><td colspan="4">21Pin EURO-SCART</td></tr>
<tr><td>Teletext System (Option)</td><td colspan="4">4 page memory FASTEXT (FLOF & LIST)
<table><tr><th>MODEL</th><th>OPTION ID</th><th>LANGUAGES</th></tr><tr><td>DTX-0000TF</td><td>BE01</td><td rowspan="2">English, French, Swedish, German, Italian, Spanish, Portuguese, Dutch, Danish, Norwegian, Catalan, Basque, Flemish, Gaelic, Faroese, Greenlandic, Icelandic, Frisian, Latin, Welsh</td></tr><tr><td>DTX-0000TU</td><td>BE06</td></tr><tr><td rowspan="2">DTX-0000TK</td><td>BE04</td><td>German, Swedish, Polish, Czechoslovak, Hungarian, Serbocroat, Rumanian</td></tr><tr><td>BE09</td><td>Baltic, Cyrillic</td></tr></table></td></tr>
</table>

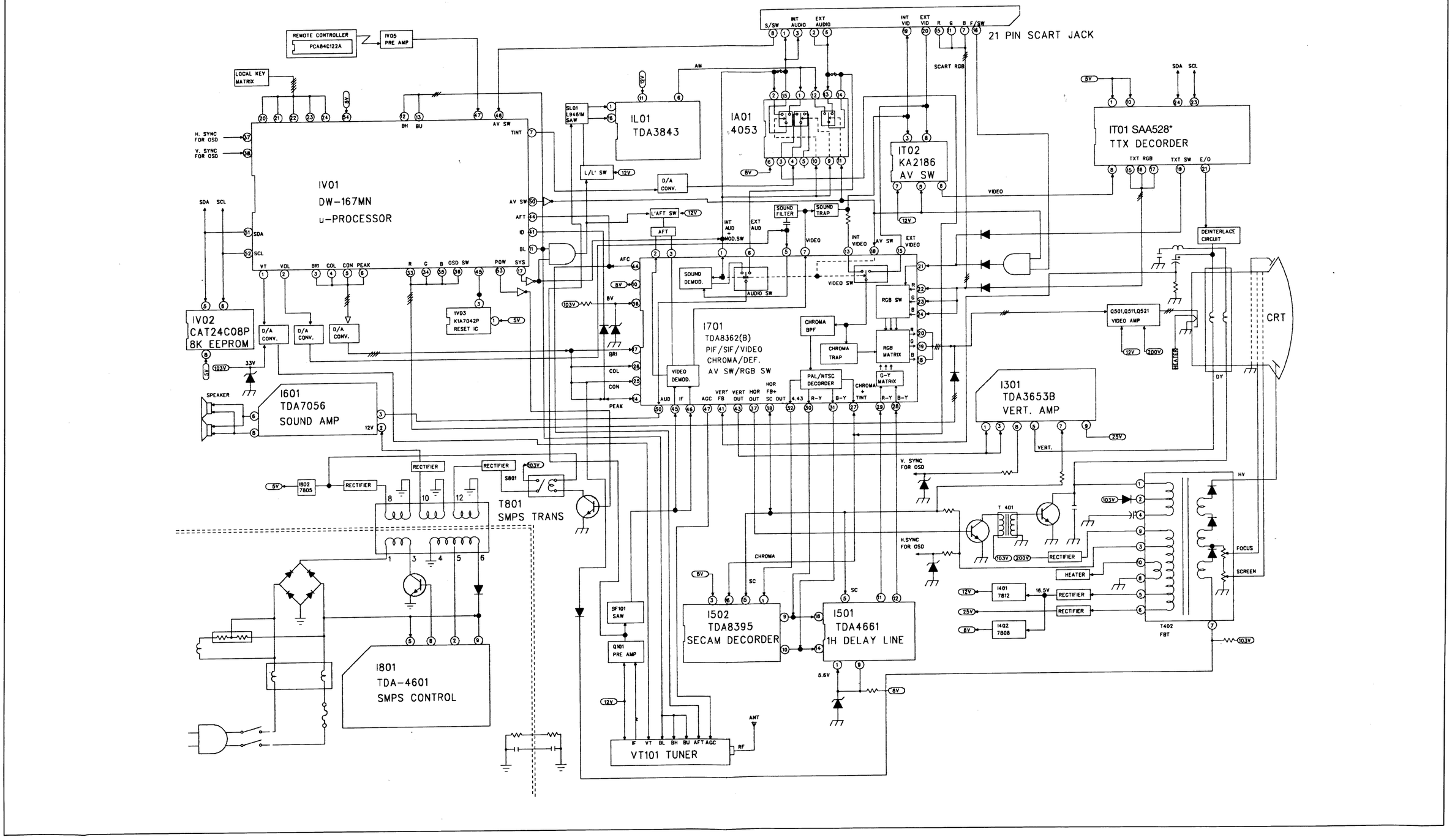
Aux Terminal:



21 pin EURO-SCART

PIN	Signal Designation	Matching Value
1	Audio Out (linked with 3)	0.5Vrms, Imp < 1KΩ (RF 60% MOD)
2	Audio In (linked with 6)	0.5Vrms, Imp > 10KΩ
3	Audio Out (linked with 1)	0.5Vrms, Imp < 1KΩ (RF 60% MOD)
4	Audio Earth	
5	Blue Earth	
6	Audio (linked with 2)	0.5Vrms, Imp > 10KΩ
7	Blue in	0.7Vpp±3dB, Imp 75Ω
8	Slow (Function) Switching	TV: 0-2V, PERI: 9.5-12V, Imp > 10KΩ
9	Green Earth	
10	NC	
11	Green In	0.7Vpp±3dB, Imp 75Ω
12	NC	
13	Red Earth	
14	NC	
15	Red In	0.7Vpp±3dB, Imp 75Ω
16	Rapid (Blanking) switching	Logic 0: 0-0.4V, Logic 1: 1-3V, Imp 75Ω
17	Video Earth	
18	Rapid Blanking Earth	
19	Video Out	1Vpp±3dB, Imp 75Ω
20	Video In	1Vpp±3dB, Imp 75Ω
21	Common Earth	

BLOCK DIAGRAM



■ SAFETY INSTRUCTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" BELOW.

■ X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not exceed the specified limit. The nominal value of the high voltage of this receiver is 25.5kv (14": 23.5kv, 21": 26.5kv) at max beam current. The high voltage must not, under any circumstances, exceed 27.5kv (14": 25.0kv, 21": 29.0kv).
   Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure on page 9 of this manual. It is recommended the reading of the high voltage be recorded as a part of the service records. It is important to use an accurate and reliable high voltage metre.
2. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.

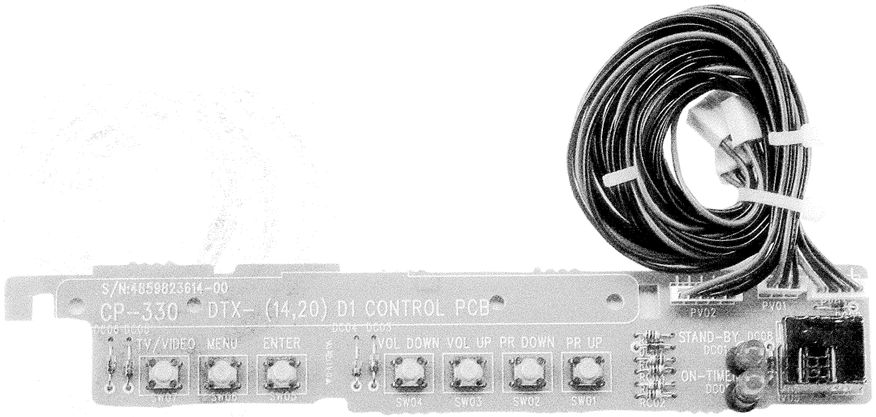
■ SAFETY PRECAUTION

1. Potentials of high voltage are present when this receiver is operating. Operation of the receiver outside the cabinet or with the back board removed involves a shock hazard from the receiver.
   1) Servicing should not be attempted by anyone who is not throughly familiar with the precautions necessary when working on high-voltage equipment.
   2) Always discharge the picture tube to avoid the shock hazard before removing the anode cap.
   3) Discharge the high potential of the picture tube before handling the tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled.
2. If any Fuse in this TV receiver is blown, replace it with the FUSE specified in the Replacement Parts List.
3. When replacing a high wattage resistor (oxide metal film resistor) in circuit board, keep the resistor 10mm away from circuit board.
4. Keep wires away from high voltage of high temperature components.
5. This receiver must operate under AC230 volts, 50Hz. NEVER connect to DC supply or any other power or frequency.

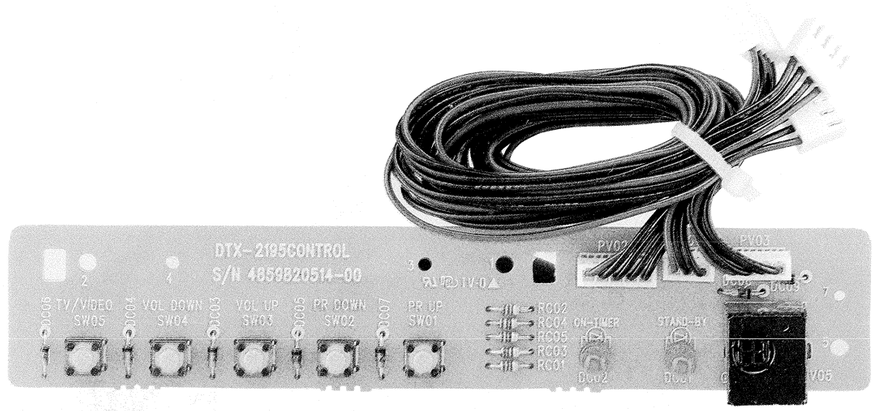
■ PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-RAY RADIATION protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements, electrical components having such features are identified by designated symbol on the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create X-RAY RADIATION.

14/20D1

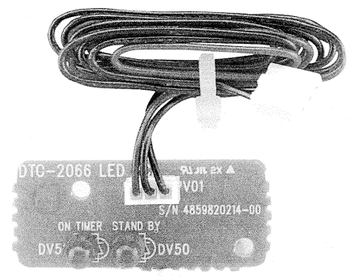


2195

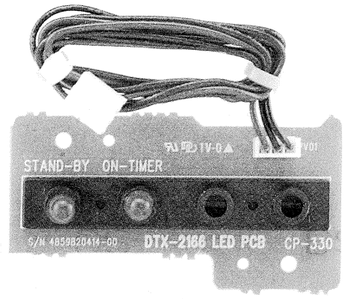


LED BOARD VIEW (2066, 2166)

2066/2075

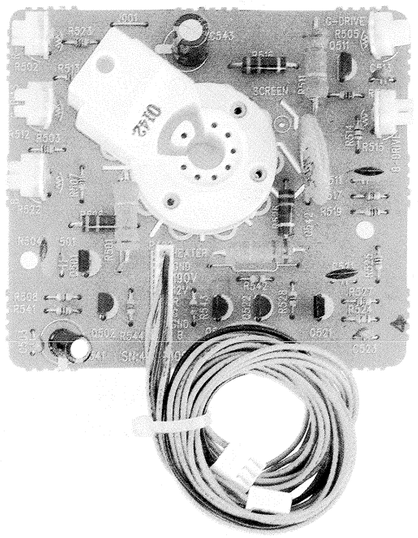


2072/2166/2172



CRT BOARD VIEW

S/N 4859809213



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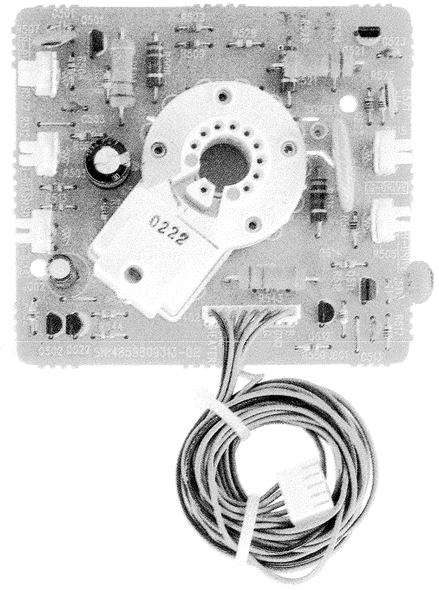
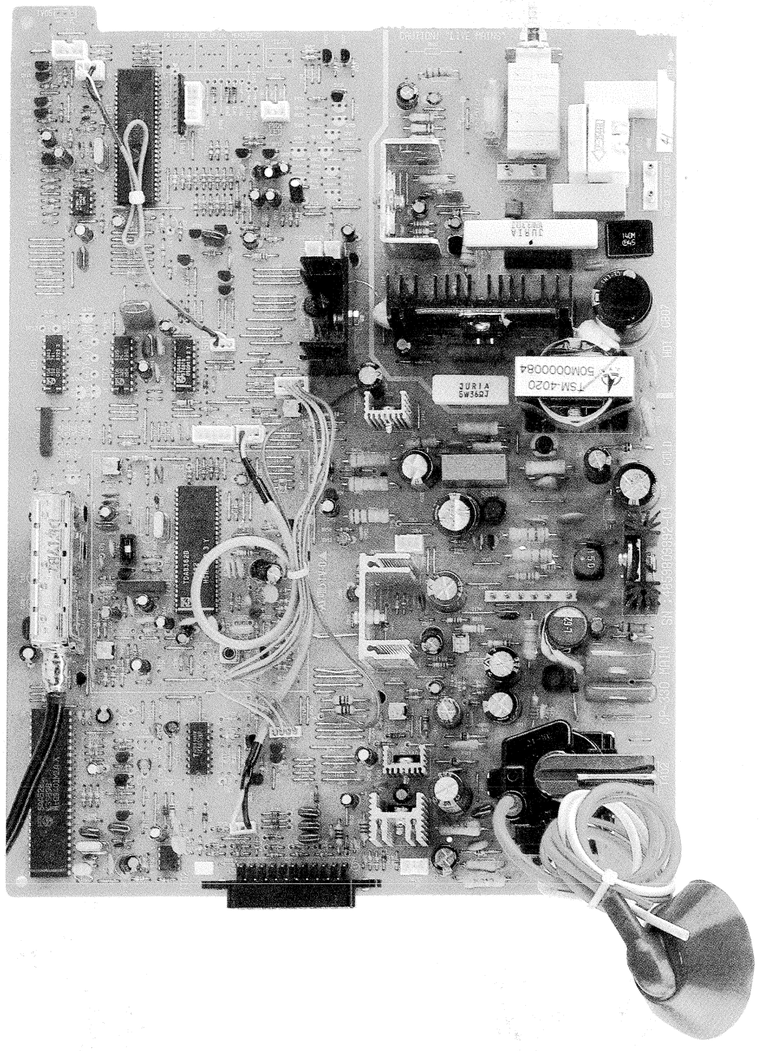


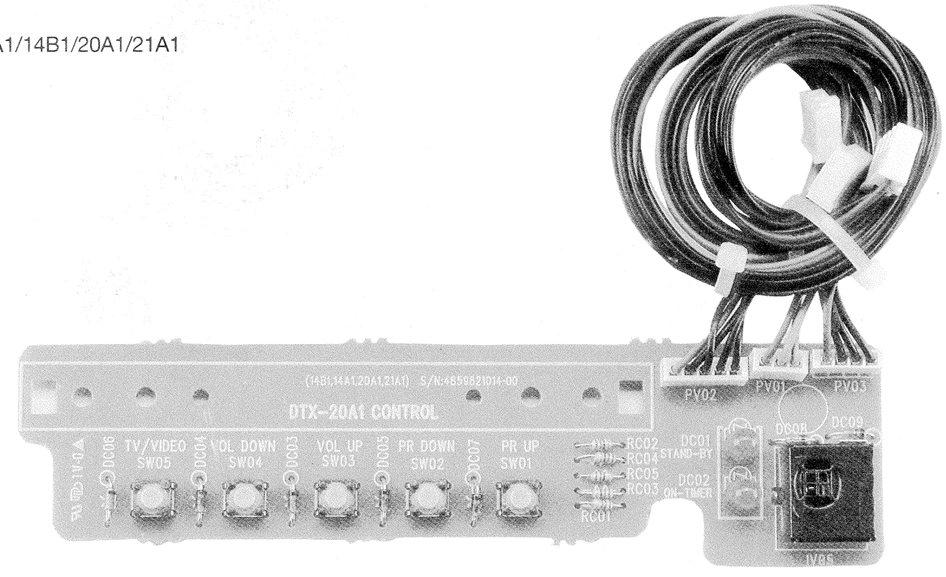
■ ASSEMBLY VIEW

MAIN BOARD VIEW

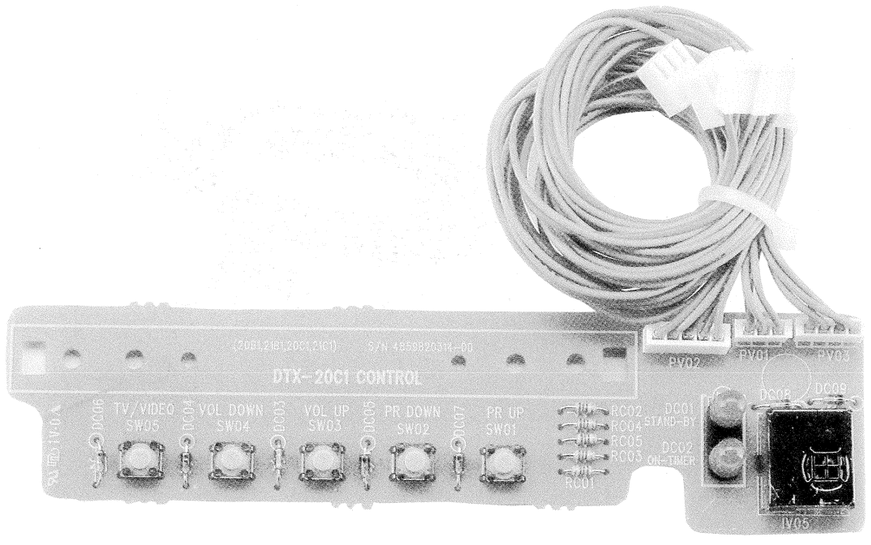


CONTROL BOARD VIEW

14A1/14B1/20A1/21A1



20B1/21B1/20C1/21C1



■ INSTALLATION & SERVICE ADJUSTMENTS

GENERAL INFORMATION

All adjustments are throughly checked and corrected when the receiver leaves the factory. Therefore the receiver should operate normally and produce proper colour and B/W pictures upon installation. But, several minor adjustments may be required depending on the particular location in which the receiver is operated. This receiver is shipped completely in a card-board carton. Carefully draw out the receiver from the carton and remove all packing materials.

Plug the power cord into a AC power outlet. Turn the receiver ON and adjust the FINE TUNING for the best picture detail. Check and adjust all the customer controls such as BRIGHTNESS, CONTRAST and COLOUR Controls to obtain a natural B/W picture.

HIGH VOLTAGE CHECK

1. Connect an accurate high voltage metre to the anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST controls to minimize (zero beam current).
3. High voltage should be below 27.5kv (14": 25.0kv, 21": 29.0kv)

AUTOMATIC DEGAUSSING

A degaussing coil is mounted around the picture tube so that external degaussing after moving the receiver is normally unnecessary. Providing the receiver is properly degaussed upon installation. The degaussing coil operates for about 1 second after the power of the receiver is switched ON. If the set is moved or placed in a different direction, the power switch must be switched off for at least 15 minutes in order to make the automatic degaussing circuit operate properly.

Should the chassis or parts of the cabinet become magnetized to cause poor colour purity, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube, the sides and front of the receiver and slowly withdraw the coil to a distance of about 2m before disconnecting it from the AC source.

If colour shading still persists, perform the COLOUR PURITY ADJUSTMENT and CONVERGENCE ADJUSTMENTS procedures, as mentioned later.

■ DYNAMIC CONVERGENCE ADJUSTMENT

Dynamic convergence (convergence of the three colour field at the edges of the CRT screen) is accomplished by proper insertion and positioning of three rubber wedges between the edges of the deflection yoke and the funnel of the CRT. This is accomplished as follows:

1. Switch the receiver on allow it to warm up for 15 minutes.
2. Apply crosshatch pattern from dot/bar generator to the receiver. Observe spacing between lines around edges of the CRT screen.
3. Tilt the deflection yoke up and down, and insert tilt adjustment wedges 1 and 2 between the deflection yoke and the CRT until the mis-convergence illustrated in figure. 2 (A) has been corrected.
4. Tilt the deflection yoke right and left, and insert tilt adjustment wedge 3 between the deflection yoke and the CRT until mis-convergence illustrated in figure. 2 (B) has been corrected.
5. Alternately change spacing between, and depth of the insertion of, the three wedges until proper dynamic convergence is obtained.
6. Use a strong adhesive tape to firmly secure latch of the three rubber wedges to the funnel of the CRT.
7. Check purity and readjust, if necessary.

■ STATIC (CENTRE) CONVERGENCE ADJUSTMENT

1. Switch the receiver on and allow it to warm up for 15 minutes.
2. Connect the output of a crosshatch generator to the receiver and concentrating on the centre of the CRT screen, proceed as follows:
   a. Locate the pair of 4 pole magnet rings. Rotage individual rings (Change spacing between tabs) to converge the vertical red and blue lines. Rotate the pair of rings (maintaing spacing between tabs) to converge the horizontal red and blue lines. (Refer to fig. 1 (A))
   b. After completing red and blue centre convergence, locate the pair of 6 pole magnet rings. Rotage individual rings (change spacing between tabs) to converge the vertical red and blue (Magenta) and green lines. Rotate the pair of rings (maintaining spacing between tabs) to converge the horizontal red and blue (Magenta) and green lines. (Refer to Fig. 1(B))

■ COLOR PURITY ADJUSTMENT

For the best result, it is recommended that the purity adjustment is made in final receiver location. If the receiver will be moved, perform adjustment with it's facing east. The receiver must have been operating 15 minutes prior to this procedure and the faceplate of the CRT must be at room temperature. The receiver is equipped with an automatic degaussing circuit. But, if the CRT shadow mask has come excessively magnetized, it may be necessary to degauss it with manual coil. Do not switch the coil.
The following procedure is recommended while using a dot generation.

1. Check for correct location of all neck components (See figure. 5).
2. Rough-in the static convergence at the centre of the CRT, as explained in the static convergence procedure.
3. Rotate the picture control to centre of its rotation range, and rotate brightness control to max. CW position.
4. Apply green color signal to procedure a green raster.
5. Loosen the deflection yoke tilt adjustment wedges (3), loosen the deflection yoke clamp screw and push the deflection yoke as close as possible to the CRT screen.
6. Begin the following adjustment with the tabs on the round purity magnet rings set together, initially move the tabs on the round purity magnet rings to the side of the CRT neck. Then, slowly separate the two tabs while at the same time rotating them to adjust for a uniform green vertical band at the CRT screen.
7. Carefully side the deflection yoke backward to achieve green purity. (uniform green screen) Centre purity was obtained by adjusting the tabs on the round purity magnet rings, outer edge purity was obtained by sliding the deflection yoke forward.
   Tighten the deflection yoke clamp screw.
8. Check for red and blue field purity by applying red signal and touch up adjustments, if required.
9. Perform black and white tracking procedure.

■ SCREEN & WHITE BALANCE ADJUSTMENT

1. This adjustment is to be made only after warming up at least 15 minutes.
2. Receive B/W pattern signal
3. Set the RGB Bias VR (R522, R512, R502) to MINIMUM.
4. Set the G, B Drive VR (R515, R505) to CENTER.
5. Set the CONTRAST, BRIGHTNESS, COLOR control to MIN, and Sub-brightness control to CENTER.
6. Connect a short clip to P301
7. Rotate the SCREEN control to clockwise or CCW so as to obtain dim horizontal line of one color in R, G and B.
8. Rotate the R, G and B Bias VR of the other color which did not appear on the screen clockwise, until a dim white line is obtained.
9. Rotate the Screen control gradually anti-clockwise until the last horizontal line disappears on the screen.
10. Remove the short chip and set the CONTRAST, BRIGHTNESS, COLOR control to MAX.
11. Set the G, B Drive VR to obtain the best white uniformity on the screen.
12. Rotate the CONTRAST, BRIGHTNESS, COLOR controls until a dim raster is obtained and touch-up adjustment of RGB Bias VR to obtain the best white uniformity on the screen.

■ SUB-BRIGHTNESS ADJUSTMENT

1. White balance adjustment must proceed this procedure.
2. Set the CONTRAST, BRIGHTNESS, COLOR control to MIN.
3. Rotate the SUB-BRIGHTNESS VR (VR701) gradually CCW until the last beam disappears on the screen.

■ VERTICAL HEIGHT ADJUSTMENT

1. Receive RETMA pattern signal.
2. Set the BRIGHTNESS control and CONTRAST control to Max., and the COLOR control to centre.
3. Adjust VR301 for the optimum vertical height and over scanning.

■ VERTICAL CENTER ADJUSTMENT

1. Receive RETMA pattern signal.
2. Adjust VR302 so that the vertical center of the picture may be coincident with the mechanical center of CRT.

■ HORIZONTAL CENTER ADJUSTMENT

1. Receive RETMA pattern signal.
2. Adjust VR401 so that the horizontal centre of the picture may be coincident with the mechanical centre of CRT.

■ FOCUS VOLTAGE ADJUSTMENT

1. Receive RETMA pattern signal.
2. Adjust the FOCUS VOLUME on the FBT and make the picture on the screen be finest.

■ RF AGC ADJUSTMENT

1. Receive PAL COLOR BAR signal in the VHF high band where the strength of signal can be 60-65 dB.
2. Set the CONTRAST control to Max., the BRIGHTNESS control to provide adequate black and grey scales.
3. Maintain the fine tuning on the screen, and adjust VR101 (AGC DELAY CONTROL VR.) in order that it may be located on the position which the picture noise disappear on the image.

■ MAIN B+ (+103V) ADJUSTMENT

1. Receive RETMA pattern signal.
2. Set the picture level to NORMAL I mode.
3. Connect DC voltage meter to the TP6 and adjust VR801 for +103V DC.

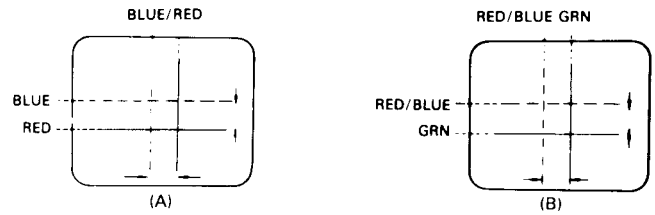


FIG. 1 CENTRE CONVERGENCE BY CONVERGENCE MAGENETS

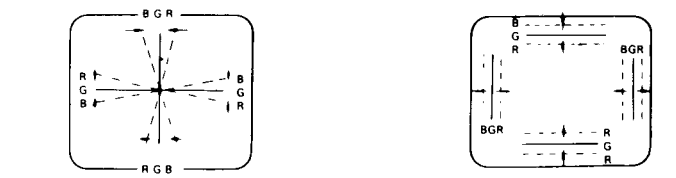


FIG. 2 CIRCUMFERENCE CONVERGENCE BY DEF. YOKE

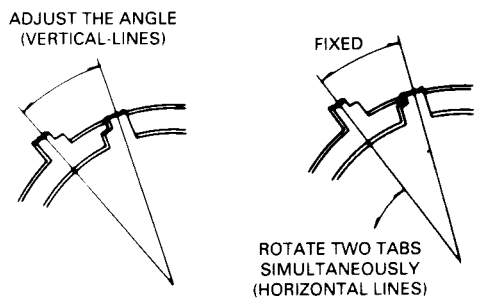


FIG. 3 ADJUSTMENT OF MAGNETS

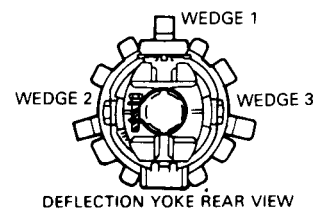


FIG. 4 RUBBER WEDGE LOCATION

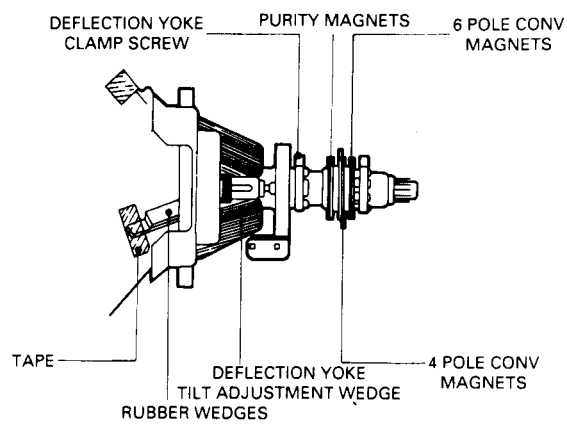


FIG. 5 PICTURE TUBE NECK COMPONENT

■ PIF ADJUSTMENT

I. APPARATUS CONNECTION & PRESETTING

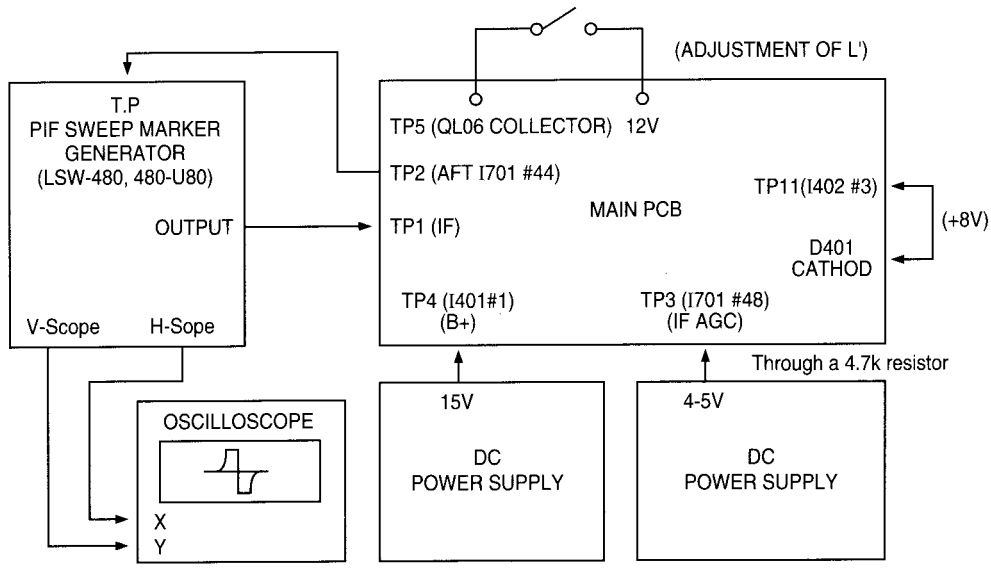
* CONNECTION

1. Connect H-out of LSW-480 to X-axis of the oscilloscope and V-out of LSW-480 to Y-axis of the oscilloscope.
2. Connect the sweep signal output to TP1.
3. Set ATTENUATOR of LSW-480 to 30dB.
4. Supply 15V D.C. voltage (B+) to TP4.
5. Supply 4-5V D.C. voltage to TP3.
6. Connect wire lead between cathode of D401 & I402 #3.

* PRESET

1) Oscilloscope Scaling
   a) Put the scale of X and Y of the oscilloscope to D.C level.
   b) Set the horizontal time display to X-Y
   c) Put the horizontal axis (X) to 1V/div. and the vertical axis (Y) to 2V/div.
2) LSW-480 MARKER FREQ. SETTING.

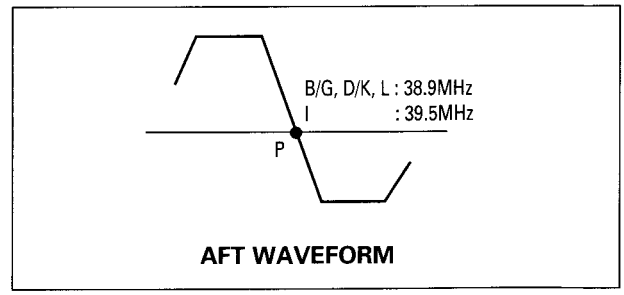
	fp(n+1)	fs	fc	fp-2	fp	fs(n-1)
B/G, D/K, L	31.9	33.4	34.5	36.9	38.9	40.4
I	31.9	33.5	35.07	37.5	39.5	41



Connection For PIF Adjustment

II. ADJUSTMENT OF AFT(B/G, D/K, I, L)

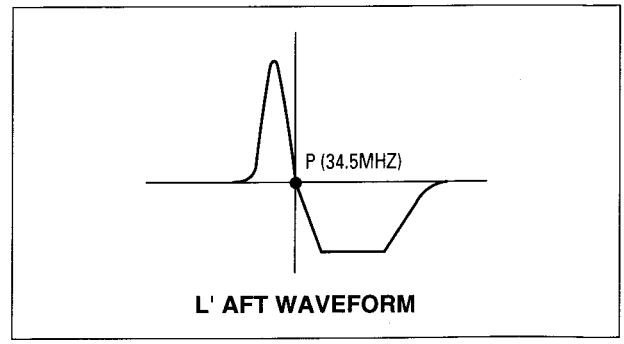
1. Connect the test point of LSW-480 to TP2.
2. Adjust L103(AFT COIL) so that the P marker point is located on the reference level.



AFT WAVEFORM

III. ADJUSTMENT OF SECAM-L' AFT

1. Connet TP5 (QL06 collector) to +12V.
2. Adjust CL09 (L'AFT TRIMMER) so that the C marker point (34.5MHz) is located on the reference level.



L' AFT WAVEFORM

■ IC OPERATION DESCRIPTION

DW-167MN** (Microcontroller)

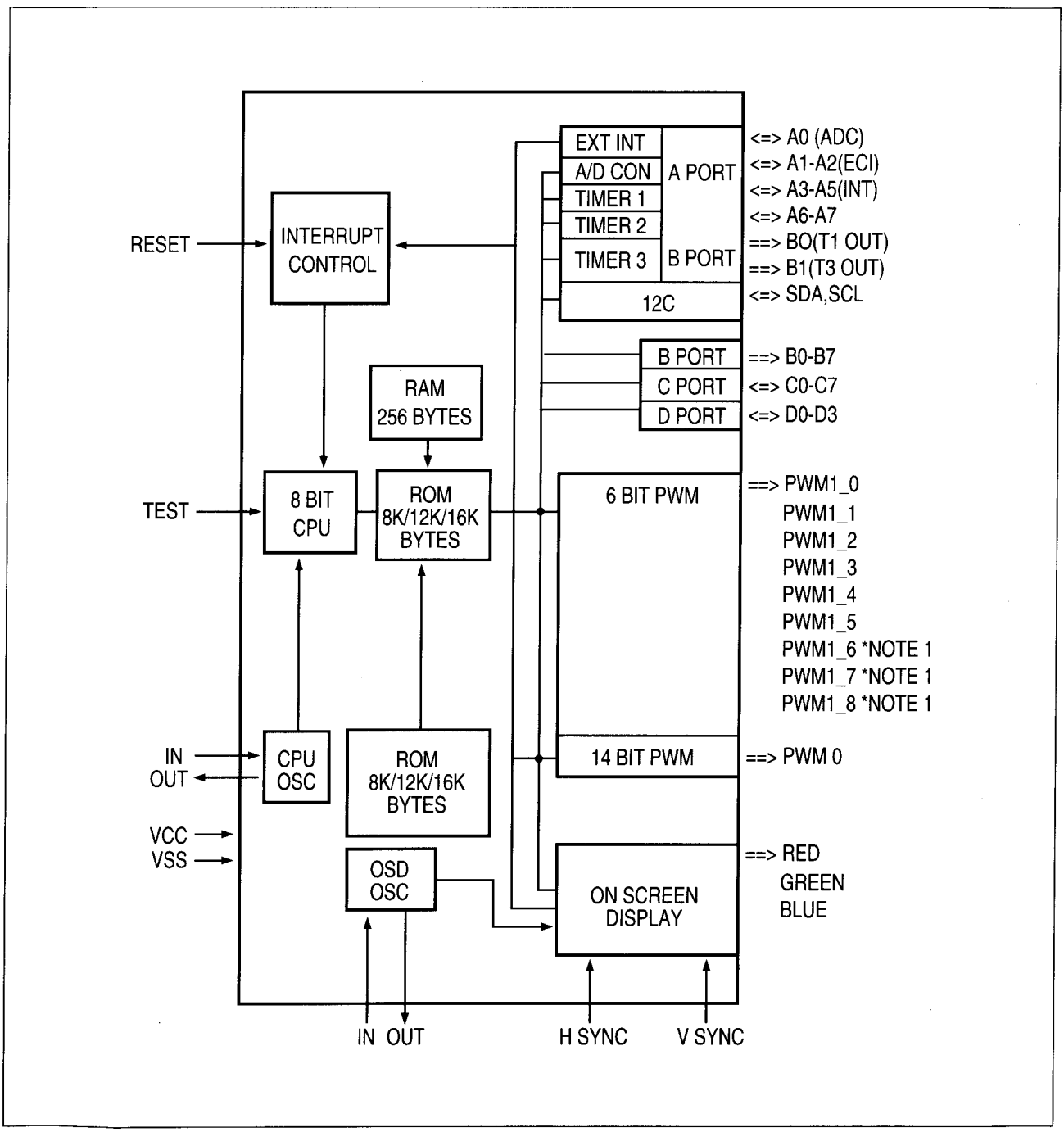
(1) General Description

It is a one-chip microcontroller with an 8-bit CPU, 16K ROM, 256 bytes RAM, OSD, A/D converter, three timers (a 16 bit timer and two 8 bit timers)

(2) Block Diagram

2. DEVICE FUNCTIONS

2.1 Functional Block Diagram



(3) Description of Terminals

<table>
<tr><th>Pin No.</th><th>Symbol</th><th>Name</th><th>Function Description</th></tr>
<tr><td>1</td><td>VT</td><td>Tuning Voltage</td><td>• The VT output is the pulse width modulated output of a 14 bit digital.
The 14 bit data is split into two parts, the most significant 6 bits and the least significant 8 bits.
The 8 bits value determines the interval of basic time
The 6 bit data decides how many TO's are added one by one in the 64 intervals.</td></tr>
<tr><td>2</td><td>VOL</td><td>Volume Control Output</td><td rowspan="6">• Outputs the pulse width modulated signal in 63 level in accordance with 6-bit latch data (active "H).</td></tr>
<tr><td>3</td><td>BRI</td><td>Brightness Control Output</td></tr>
<tr><td>4</td><td>COL</td><td>Colour control Output</td></tr>
<tr><td>5</td><td>CON</td><td>Contrast control Output</td></tr>
<tr><td>6</td><td>SHARPNESS</td><td>Sharpness Control Output</td></tr>
<tr><td>7</td><td>TINT</td><td>Tint Control Output</td></tr>
<tr><td>8</td><td></td><td></td><td>Not used</td></tr>
<tr><td>9</td><td>MUTE</td><td>Sound Mute Control</td><td rowspan="2">• Mute Output is active "H"
• On power on/off state, instantaneously cut off the sound and video.</td></tr>
<tr><td>10</td><td>MUTE</td><td>Video Mute Control</td></tr>
<tr><td>11
12
13</td><td>BL
BH
BU</td><td>Band Selection Output</td><td>• There are control band signal output terminals for a tuner.
• Assignment for bands is as follows:
<table>
<tr><th>Band</th><th>BL</th><th>BH</th><th>BU</th></tr>
<tr><td>VHF-L</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>VHF-H</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>UHF</td><td>H</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>14</td><td></td><td></td><td>Not used</td></tr>
<tr><td>15</td><td>LED</td><td>STAND BY ON/OFF Control & REMOTE Control</td><td>• The switch-mode power supply is controlled.
"L" ---------- power on
"H" ---------- power off
• Remote control is received.
"L" ---------- LED OFF
"H" ---------- LED ON</td></tr>
<tr><td>16</td><td>LED</td><td>On Timer</td><td>• ON TIME is controlled.
"L" ---------- LED OFF
"H" ---------- LED ON</td></tr>
<tr><td>17</td><td>SYS</td><td>System Control Output</td><td>• This pin is used to control the sound and IF part for two different TV transmission standard.</td></tr>
</table>

Pin No.	Symbol	Name	Function Description
18			• Not used.
19	AFT	4 Bit ADC Input	• Comparison voltage input terminal connected to built-in comparator. • Input AFT signal from TV with level conversion (0 to Vdd) • The results of the comparison are used when the autosearch and digital AFT(described later) works.
20	KS1	Key SCAN IN/OUT1	• Input and output pin KS1 to KS5 are used to scan to local keyboard matrix. • The keyboard is scanned every 25 msec; for timing, see as follows. • If a key press is detected for 5 periods, it is recognized as a valid key command. • The repetition of the local keyboard is 125 msec, which is almost equal to the repetition time of the remote control unit.
21	KS2	Key SCAN IN/OUT2	
22	KS3	Key SCAN IN/OUT3	
23	KS4	Key SCAN IN/OUT4	
24	KS5	Key SCAN IN/OUT5	
25	OKS1	Option Key Scan Output 1	• This pin is used to scan the various system options. An active low signal is generated at the very first switch-on ("COLD START"). • Local keyboard control inputs OKS1 to OKS3 are read first; all keys on the local keyboard must be released, otherwise it will wait until they are. • The pins that have a diode connection to OKS are read back as 0, the pins that do not have such diode connection are read back as a logic 1.
26	OKS2	Option Key Scan Output 2	
28	OKS3	Option Key Scan Output 3	
27	GND	GND Reference	
29			• Not used
30			
31			
32			
33	R	OSD Red colour Output	• Output R.G and B deliver the colour components for the OSD while output BK is used as a test blanking signal. • The output polarity of the R.G.B and BK terminals are active "H".
34	G	OSD Green Colour Output	
35	B	OSD Blue Colour Output	
36	Y	Y out of OSD	
37	H-sync	H-sync input for OSD	• Input terminal for CRT display horizontal synchronous signal. • Input rectangular pulses whose amplitude is in the range from 0 to 5V. • The input polarity is active "L" • The signal state should be active for the time more than that required for three scanning lines.

Pin No.	Symbol	Name	Function Description
38	V-sync	V-sync input for OSD	• Input terminal for CRT display vertical synchronous signal. • Input rectangular pulses whose amplitude is in the range from 0 to 5V. • The signal state should be active for the time more than that required for three scanning lines. The input polarity is active "L"
39	DOSCI	Clock input for OSD	• Input DOSC has to be connected to an external LC network which controls the oscillation frequency of the internal OSD pixel oscillator.
40	DOSCO	Clock output for OSD	
41	ID	Sync Ident Input	• Input terminal of image synchronous signal necessary for auto search and AFT operation. • In the case of the determination of the level signal synchronization, the signal state ("H" of "L") which is input at this terminal is determined every 4ms. "H" ---------- Presence of synchronization "L" ---------- Absence of synchronization
42	GND	Ground	Should be fixed to "GND"
43	OSCI	Clock input for CPU	• The OSCI and OSCO are used to control the onechip oscillator of the µ-controller. • SOCI is the input terminal and OSCO the output terminal. • All internal timing of the µ-controller (except for the OSD part) are derived from this oscillator. • The oscillator frequency has to be 6MHz.
44	OSCO	Clock output for CPU	
45	RESET	Reset Input	• This pin is used to reset the µ-controller after a power-on reset. In order to be sure that the µ-controller starts from an initiallized state after the supply voltage is avilable, a reset signal has to be applied. This reset signal has to be low until a stable 5V supply voltage is available.
46	S/SW	Scart Input	
47	IR	Remote Signal Input	• Remote control signal input terminal. • Active "L"
48			Not used
49			Not used
50	AV1	AV switching out 1	• Output pin AV defines whether internal audio/video signals (TV) or external signal from peripheral TV connector are selected. • When output state becomes "H", TV mode is set. When output state becomes "L", AV mode is set. It always start from TV mode.

Pin No.	Symbol	Name	Function Description
51	SDA	Data Pin for IIC(I/O)	• Pins SCL and SDA are respectively the data and clock wire of the multi-master two-wire bidirection I C-bus control bus. • If a transmission does not succeed the controller will retry it for up to 5 times. If the bus in occupied for longer than 1.18 seconds the μ-controller will generate bursts of nine clock pulses with intervals of 1.18 seconds until bus is free again.
52	SCL	Clock Pin for IIC(O)	
53	POWER	Stand by ON/OFF Control Output	• The switch-mode power supply is controlled. "L" ---------- power ON "H" ---------- power OFF
54	Vcc	Power supply input terminal	• Connected to the 5V power supply.

TDA8362

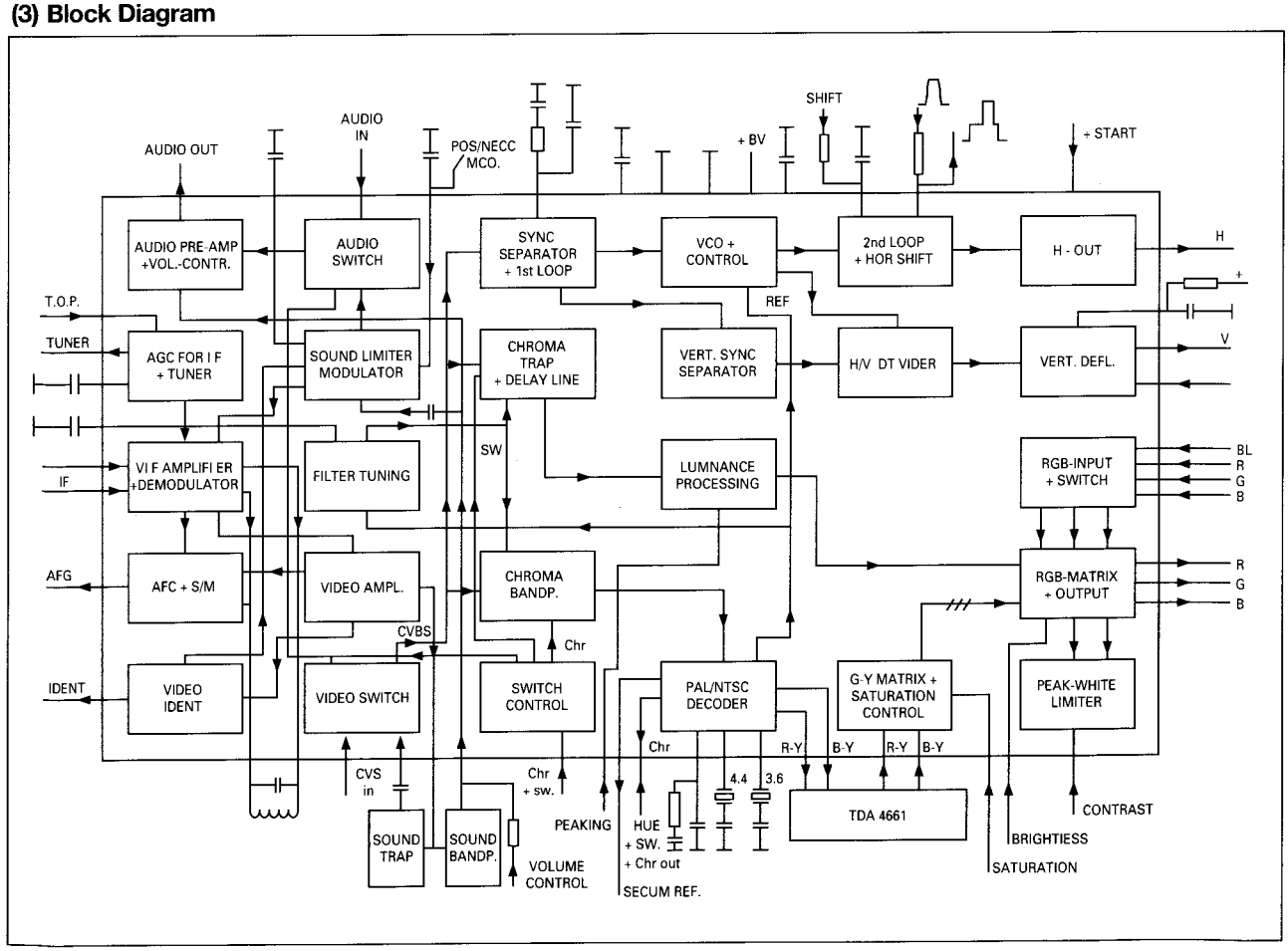
(1) Features

- Multi-standard vision IF circuit (positive and negative modulation)
- Multi-standard FM sound demodulator (4.5 MHz to 6.5 MHz)
- Video and audio switches (CVBS int/ext, S-VHS and audio int/ext)
- Integrated chroma trap and bandpass filters (autocalibrated)
- Luminance delay line integrated
- PAL/NTSC colour decoder with automatic search system
- Easy interfacing with the TDA 8395 (SECAM decoder) for multi-standard applications
- RGB-control circuit with linear RGB inputs and fast blanking
- Horizontal synchronization with two control loops and alignment-free horizontal oscillator
- Vertical count-down circuit and vertical pre-amplifier
- Low dissipation (only 600mW)
- Small amount of peripheral components compared with competition IC's
- Only one adjustment (vision IF demodulator)

(2) Description

- Vision IF amplifier, video demodulator, video amplifier, AGC and AFC suitable for both negative and positive modulation.
- Sound limiter, demodulator and amplifier with volume control.
- Inputs and switches for external audio and CVBS signals.
- Synchronization circuit with drive circuits for horizontal and vertical deflection.
  X-ray protection (combined with the 2nd phase detector pin).
- PAL/NTSC color decoder in which the chroma filters (bandpass and trap) and the luminance delay line have been integrated. The circuit has a separate chroma input and the filters can be switched-off so that S-VHS signals (via an external switch) can be applied to the IC.
  For SECAM applications an (alignment-free) SECAM-decoder can be added to the IC.
  Peaking circuit in the luminance channel.
  RGB-output circuit with linear inputs for On-screen Character Display.

(3) Block Diagram



<table>
<tr><th>Pin No.</th><th>Name</th><th>Function Description</th></tr>
<tr><td>1</td><td>Audio De-emphasis</td><td>At this pin the audio signal is available for scart. The signal has an amplitude of 350mVrms (at δf = 50KHz) is non volume controlled and has to be buffered. (notice the output impedance influences the deemphasis). For scart requirements, the buffer should be dimensioned as an amplifier in order to increase the output signal.
A third function of this pin is the positive modulation switch. When the voltage at this pin is above Vcc-1V positive modulation is selected. The current needed is 100µA typical.</td></tr>
<tr><td>2, 3</td><td>IF
Demodulator
Tuned Circuit</td><td>Because the demodulator performance depends on the Q factor, we want to keep the Q factor as high as possible. But this means that the steepness of the AFC will change with the Q factor of the tuned circuit itself and also with the input impedance of the IC. A compromise has to be made. The input impedance of the IC is as large as possible (about 12 kOhms) and the Q factor of normal tuned circuits varies from 70 to 90. By means of an external resistor, it is possible to damp the circuit to a Q of 40 to reduce the steepness variation of the AFC.</td></tr>
<tr><td>4</td><td>Video
Identification
Output</td><td>The identification output has a three level output, 0.5, 6 or 8V.
<table><tr><th>Output voltage "video not identified"</th><th>0.5 V max</th></tr><tr><td>Output voltage "video identified" and colour signal available with f_{sc} = 3.5 MHz</td><td>6V</td></tr><tr><td>Output voltage "video identified" and colour signal available with f_{sc} = 4.4 MHz or no colour signal detected</td><td>8V</td></tr></table>The maximum load current on this pin is 25µA.
The output impedance is 20 KΩ.</td></tr>
<tr><td>5</td><td>SIF input
+Volume control</td><td>The sound input impedance is 8.5kΩ/5pF which has to be taken into account for the ceramic filters. For DC, the impedance is very high. The PLL is sensitive for high freq. AC signal > 1mVrms. Because of the chosen principle: an adjustment free PLL it is needed to have an internal PLL with a large bandwidth (catching range). This implies the system also is sensitive for spurious frequencies. Both layout and sound band pass filters need special attention.
The volume can be controlled at this pin by means of a DC voltage of 0.2-5V for min-max gain.</td></tr>
<tr><td>6</td><td>External
Audio Input</td><td>External sound signals from scart, for example, can be applied to this pin via a capacitor. The input impedance is 25kΩ.</td></tr>
<tr><td>7</td><td>IF Video
Output</td><td>A multistandard concept requires several filters at the video output (sound-trap and sound-band pass filters). This causes a too big capacitive load at the video output so an EMITTER FOLLOWER as buffer should be added.
The required emitter current depends on the number of filters applied.</td></tr>
<tr><td>8</td><td>Decoupling
digital Supply</td><td>Decoupling Digital Supply</td></tr>
<tr><td>9</td><td>Ground</td><td>Ground 1 (IF, H sync, RGB output, Digital, H output)</td></tr>
<tr><td>10</td><td>Positive
Supply (8V)</td><td>Supply (IF, Sound, H sync, Chroma, Filters, RGB output, Digital)</td></tr>
<tr><td>11</td><td>Ground</td><td>Ground 2 (Sound, Chroma, Filters, Hosc, PHI-1, PHI-2)</td></tr>
</table>

<table>
<tr><th>Pin No.</th><th>Name</th><th>Function Description</th></tr>
<tr><td>12</td><td>Decoupling
filter tuning</td><td>Variations in the tuning voltage outside calibration (i.e. during field scan), due to external leakage current or interference sources, will result in mistuning of the luminance notch filter, chroma bandpass filter and luminance delay stage.
Unwanted voltage signals at pin 12 due to external leakage currents or crosstalk from interference sources should be less than 100mV. A capacitor of 100nF requires that external leakage currents at pin 12 should be less than 0.5µA.</td></tr>
<tr><td>13

15</td><td>Internal CVS input

External CVS input</td><td>The internal and external CVBS amplitudes should be $2V_{pk-pk}$ and $1V_{pk-pk}$ respectively; their source impedances should be low so as to minimize crosstalk from interference sources. The internal CVBS input is derived from the IF video output (pin 7) and the external CVBS input can be derived from either SCART CVBS or YSVHS; they should be AC coupled to pins 13 & 15 respectively. The coupling capacitors are chosen in order to have fast clamping and minimum line/field sag.</td></tr>
<tr><td>14</td><td>Peaking
control input</td><td>The input impedance of pin 14 is very high (MOS input). The DC voltage at the peaking control input controls the gain of the peaking amplifier. The peaking control input voltage should have a DC voltage range from 0 to 5V.</td></tr>
<tr><td>16</td><td>AV switch input
+ Chroma (SVHS) input</td><td>The input inpedance of the chroma and A/V switch input (pin 16) is 15kΩ in parallel with 5pF.
A DC voltage on this pin controls the internal/external CVBS and AUDIO selection where the following table gives the various possibilities:
<table>
<tr><th>Vpin 16 (dc)</th><th>Internal CVBS</th><th>External CVBS/Y</th><th>CSVHS signal</th><th>Luminance notch</th><th>Audio signal</th><th>Model</th></tr>
<tr><td>< 0.5V</td><td>on</td><td>off</td><td>off</td><td>on</td><td>Internal</td><td>TV</td></tr>
<tr><td>Between 3V & 5V</td><td>off</td><td>on(Y)</td><td>on</td><td>off</td><td>External</td><td>S VHS</td></tr>
<tr><td>> 7.5V</td><td>off</td><td>on (CVBS)</td><td>off</td><td>on</td><td>External</td><td>AV</td></tr>
</table></td></tr>
<tr><td>17</td><td>Brightness
Control input</td><td>The brightness control voltage present at pin 17 controls the dc level of the RGB outputs where a brightness control voltage of 0 → 5V at pin 17 results in a black level shift at the RGB outputs of ±1V about the nominal.</td></tr>
<tr><td>18
19
20</td><td>B-output
G-output
R-output</td><td>The RGB output signals are supplied to the video output stages. For nominal input signals (i.e. CVBS and-(R-Y)/-(B-/Y) signals) and for nominal gain settings then the RGB output signal amplitudes (black-to-white) are typically 4V with a black level at approximately 1.3V.
The blanking level is 0.8V and maximum peak white level is 6.0V.
Since the RGB output stages are made with emitter followers, the maximum sink current is limited to 1.5mA. Therefore the current delivered from the video output stages to the RGB pins must not exceed 1.5mA.
When the RGB switch control (pin 21) voltage exceeds 4V then the RGB outputs are blanked and consequently on-screen display signals (OSD) can be supplied to the video output stages.</td></tr>
</table>

Pin No.	Name	Function Description
21	RGB insertion + Blanking input	The RGB insertion signals are selected by means of a fast switch control. With the conditions that: $0.8V < V_{pin21} < 3.1V$ then the RGB insertion signals are selected. And input voltage to blank the RGB-outputs so that OSD signals can be applied to these outputs is 4.5V (min).
22 23 24	R-input for insertion G-input for insertion B-input for insertion	The RGB insertion signal information is coupled via 100nF to pins 22, 23 and 24 respectively. The coupling/clamping capacitors should always have a low impedance path to ground for proper clamping operation.
25	Contrast Control Input	The contrast control input of 0 → 5V at pin 25 gives a 20dB gain range at the RGB outputs. When one of the RGB output signals exceed 6V, it is then clipped to 6V and also the gain of the RGB output amplifiers can be reduced by adapting the contrast voltage using the peak white limiter (PWL) current. The PWL current during PWL operation is 100µA.
26	Saturation Control Input	The saturation control input voltage, present at pin 26, is 0 → 5V. this corresponds to a 52dB gain range of the -(R-Y)/-(B-Y) signals.
27	Chroma output + Hue Control Input	If the $V_{pin27} > 6v$, the ASM does not search for NTSC signals and the decoder application can only be PAL or PAL/SECAM. The output impedance with an external resistance of 22kΩ to 8V is then approximately 500Ω. The hue control input pin should be provided with a voltage of 0 to 5V for NTSC decoder applications; within this voltage range the input impedance is very high (MOS input).
28 29	B-Y input R-Y input	The -(R-Y)/-(B-Y) signals, present at pins 11 and 12 of the TDA4661, are coupled via 100nF (these capacitors are also clamping capacitors) to pins 29 and 28. The maximum input current of both pins is 1µA. With 100nF coupling capacitors the voltage drop over a line period is less than 0.5mV. Since the output impedance of pin 11 and 12 of the TDA 4661 is maximal 400Ω then the signal tracks between the TDA4461 and the TDA8362 should have good ground shielding and be as short as possible.
30 31	R-Y output B-Y output	The output impedance of pins 30 & 31 is approximately 250Ω when PAL/NTSC signals are identified. For SECAM signals the output impedance is very high (output switch is open) and any external circuitry is not loaded (i.e. the demodulator outputs of the TDA8395). During the line/field blanking periods of the sandcastle pulse, the demodulator outputs are set to the correct dc levels so as no offsets exist. The -(R-Y)/-(B-Y) outputs are coupled, via 1nF, to pins 16 & 14 of the TDA4661 respectively.
32	4.43 MHz output for TDA8395	A SECAM reference signal (4.43 MHz only) is delivered directly from pin 32 of the TDA8362 to pin 1 of the TDA8395. When SECAM signals are identified by the TDA8395, it withdraws a current of 150µA from pin 32. The SECAM interface communicates the ident information via this current to the ASM. If PAL/NTSC signals are not already identified by the ASM and the identified signal is 50 Hz then an acknowledge will be given by the ASM to the TDA8395 by setting the voltage at pin 32 to 5V. With SECAM identified, the SECAM reference signal is gated and present at pin 32 only during the field retrace period. When PAL/NTSC is identified, the output level is 1.5V.

Pin No.	Name	Function Description
33	Loop Filter (Burst Phase Detector)	One of the important aspects of the PLL is the loop filter connected to pin 33. It ensures that the PLL synchronizes the VCXO, in both frequency and phase, with the incoming burst (average burst for PAL standards). It also determines the dynamic performance of the loop where the important parameters are: – Noise immunity – Transient response – Acquisition behaviour The remaining aspects of the PLL/VCXO are static phase error and X-tal type used at pins 34 or 35. For small static phase errors (less than 5°) the requirements are: – The combined burst phase detector and VCXO sensitivity are high. – The offset of the burst phase detector output is small. – The external leakage current at pin 33 is small. The TDA8362 determines the first two; the third is determined by the external leakage resistance of pin 33 to ground. Deviations in the VCXO free running frequency due to X-tal or X-tal load capacitance spreads have negligible influence on the static phase error because the combined phase detector and VCXO sensitivity is high. The static phase error is due to the internal offset of the phase detector output and the external leakage current at pin 33. Static phase errors much less than 5° were measured.
34 35	3.58MHz X-TAL Connection 4.43MHz X-TAL Connection	To ensure correct operation of both colour processing and sync calibration circuits in the TDA8362, 4.43 X-tals must not be connected to pin 34 and 3.58 X-tals must not be connected to pin 35.
36	Start Horizontal Oscillator	The minimum current required for the start function is 6.5mA, then the voltage will be approx. >7.2V. The voltage at pin 36 may not exceed 8.8V, so depending on the application external clamping is necessary. If the start voltage is below approximately 5.8V then the horizontal output will be disabled. The decoupling should be sufficient because the start pin supplies the circuitries needed for the horizontal output. (The oscillator references, however, are supplied by the bandgap.) This pin must be connected directly to the supply pin when no start function is used.
37	Horizontal Output	This open collector output drives the horizontal output stage. The maximum allowable current is 10mA. The saturation voltage then will be 0.3V.
38	Flyback input +Sandcastle Output	A sandcastle signal is available at this pin for external use. The signal levels are: Burst typ 5.3V, the output impedance is approx. 1kΩ Flyback typ 3 V, impedance defined by the flyback circuit. Field blanking typ 2 V, the output impedance is approx. 4kΩ The flyback input signal is used for the PHI-2 loop and RGB line blanking. Pin 38 requires a current of only a few µA in order to reach the 3V flyback clamping level. Detection of the flyback pulse (and thus RGB blanking) only occurs when the input current is at least 100µA. (The maximum allowable current is 300µA.) Additional remarks: – Due to an internal base current at pin 38, the voltage level becomes 3V when the pin is not loaded. – During start-up pin 38 is forced low by 2mA.

Pin No.	Name	Function Description
39	ø-2 loop Filter + X-Ray Protection	The phase error on screen due to storage time variations depends on the PHI-2 loopgain. In principle this figure is fixed but will decrease when an additional resistor comes in parallel to the capacitor at pin 39. The time constant is defined by the external capacitor. The voltage to switch on the X-ray protection is 6V. (min.)
40	ø-1 loop Filter	The PHI-1 behaviour depends on both the loop filter externally connected at pin 40 and the PHI-1 output currents. The PHI-1 output current has been made switchable during scan (a fixed current ratio) in order to avoid the need of switching the loop filter for normal-and noisy-signals. This implies the loop filter can be optimised for both VCR-and noisy-signals.
41	Vertical Feedback Input	The feedback signal is derived by sensing the deflection coil current by means of a resistor. The feedback signal is related to the vertical ramp signal. The ramp amplitude should be 1Vpp while the DC level is 2.5V typical. The guard levels are 1 and 4Vtyp. In order to filter horizontal into a capacitor is mounted at the input.
42	Vertical Ramp Generator	The vertical ramp is defined as: – DC clamping voltage of 2V – AC amplitude of 1.5Vpp for a 50Hz field signal – AC amplitude of 1.25Vpp for a 60Hz field signal The AC amplitude of 1.5V is important for optimal pre-correction and 50/60Hz gain correction.
43	Vertical Output	The vertical drive output is fed to the deflection-IC. The available output current is minimal 1mA, and the available output voltage is 4-5V. During retrace the drive output has to be constant and equal to the low level of 0.3V.
44	AFC Output	The AFC steepness can be influenced by the Q of the tuned circuit and output resistors at the AFC output pin (60kΩ output impedance internally). Due to current reserve the steepness can be reduced by a factor 4-5 while the output voltage swing remains 6V. Some small video information can still be present at the AFC output pin although a S&H function is applied. This video information can be filtered by an external capacitor at this pin. The AFC output voltage changes from approximately 0.5-6.3V. The output impedance of AFC circuit is 50kΩ.
45,46	IF Input	DC coupling is allowed, so no series capacitors are necessary. The circuit matches the required load impedance for commonly used SAW filters (2k/3pF).
47	Tuner AGC Output	The tuner AGC is an open collector output which is acting as a variable current source to ground. Normally the output application circuit is designed for an output current swing of 1-2mA. In order to improve the dynamical behaviour during channel switching it is possible to sink with a current of approximately 12mA maximal. The max voltage is Vcc+1V.
48	AGC Decoupling Capacitor	Increasing of the AGC time constant is achieved by increasing the AGC capacitor on pin 48. Increasing this capacitor also results in an improvement in the catching and holding range of the ident circuit.

Pin No.	Name	Function Description
49	Tuner Take-Over Adjustment	The control range at this pin is 0.5-4.5V. Characteristics: The tuner take over adjust voltage versus IF input signal is a linear function with a slope of approximately 20mV/dB. (Measured at an AGC output current of 1mA) In order to achieve a stable AGC control at strong signals a decoupling capacitor of at least 1nF at this pin is required. Alignment: With the potentiometer connected to pin 49 of the TDA8362, the tuner take over point can be adjusted when an RF signal is applied to the aerial input of the tuner.
50	Audio Input	The DC output voltage is 3.3V. The volume controlled output signal is AC coupled to the sound output amplifier. The output impedance is 250Ω.
51	Decoupling Sound Demodulator	This pin defines the DC voltage at the deemphasis and sound output. The pin forms a low pass filter in the DC feedback loop. This implies that the sound amplitude for lower frequencies, < fk, is attenuated. A bigger capacitor, in order to decrease fk, is allowed but increases the DC setting time.
52	Decoupling Bandgap Supply	Decoupling Bandgap Supply

TDA4661 (Base Band Delay Line)

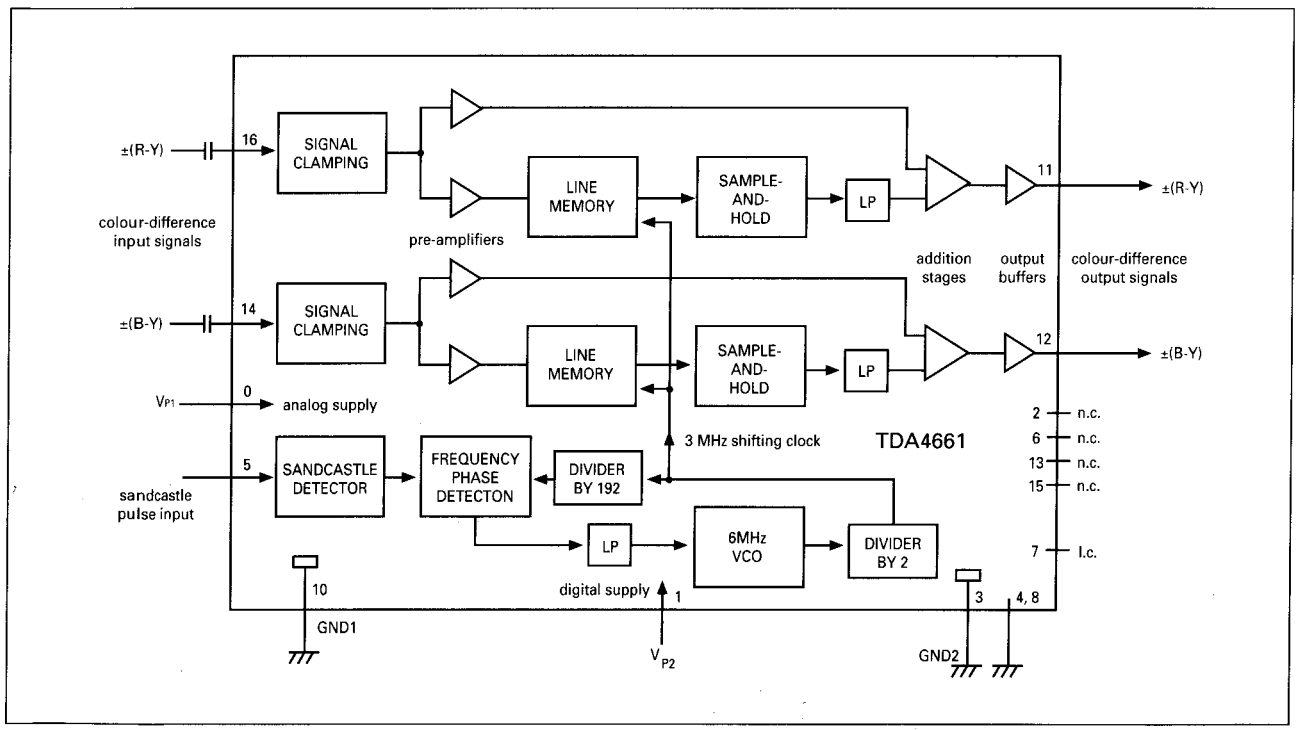
(1) Features

- Two comb filters, using the switched-capacitor technique, for one line delay time (64µs)
- Adjustment free application
- No crosstalk between SECAM colour carriers (diaphoty)
- Handles negative or positive colour-difference input signals
- Clamping of AC-coupled input signals (±(R-Y) and ±(B-Y)
- VCO without external components
- 3MHz internal clock signal derived from a 6MHz VCO, line-locked by the sandcastle pulse (64 µs line)
- Sample-and-hold circuits and low-pass filters to suppress the 3 MHz clock signal
- Addition of delayed and non-delayed output signals
- Output buffer amplifiers
- Comb filtering functions for NTSC colour-difference signals to suppress cross-colour

(2) General Description

The TDA4661 is an integrated baseband delay line circuit with one line delay. It is suitable for decoders with colour-difference signal outputs ±(R-Y) and ±(B-Y).

(3) Block Diagram



(4) Pin Description

SYMBOL	PIN	DESCRIPTION
V_{P2}	1	+5V supply voltage for digital part
n.c.	2	not connected
GND 2	3	ground for digital part (0 V)
i.c.	4	internally connected
SAND	5	sandcastle pulse input
n.c.	6	not connected
i.c.	7	internally connected
i.c.	8	internally connected

SYMBOL	PIN	DESCRIPTION
V_{P1}	9	+5V supply voltage for analog part
GND 1	10	ground for analog part (0 V)
V_O (R-Y)	11	± (R-Y) output signal
V_O (B-Y)	12	± (B-Y) output signal
n.c	13	not connected
V_I (B-Y)	14	± (B-Y) input signal
n.c	15	not connected
V_I (R-Y)	16	± (R-Y) input signal

TDA8395 (Secam Decoder)

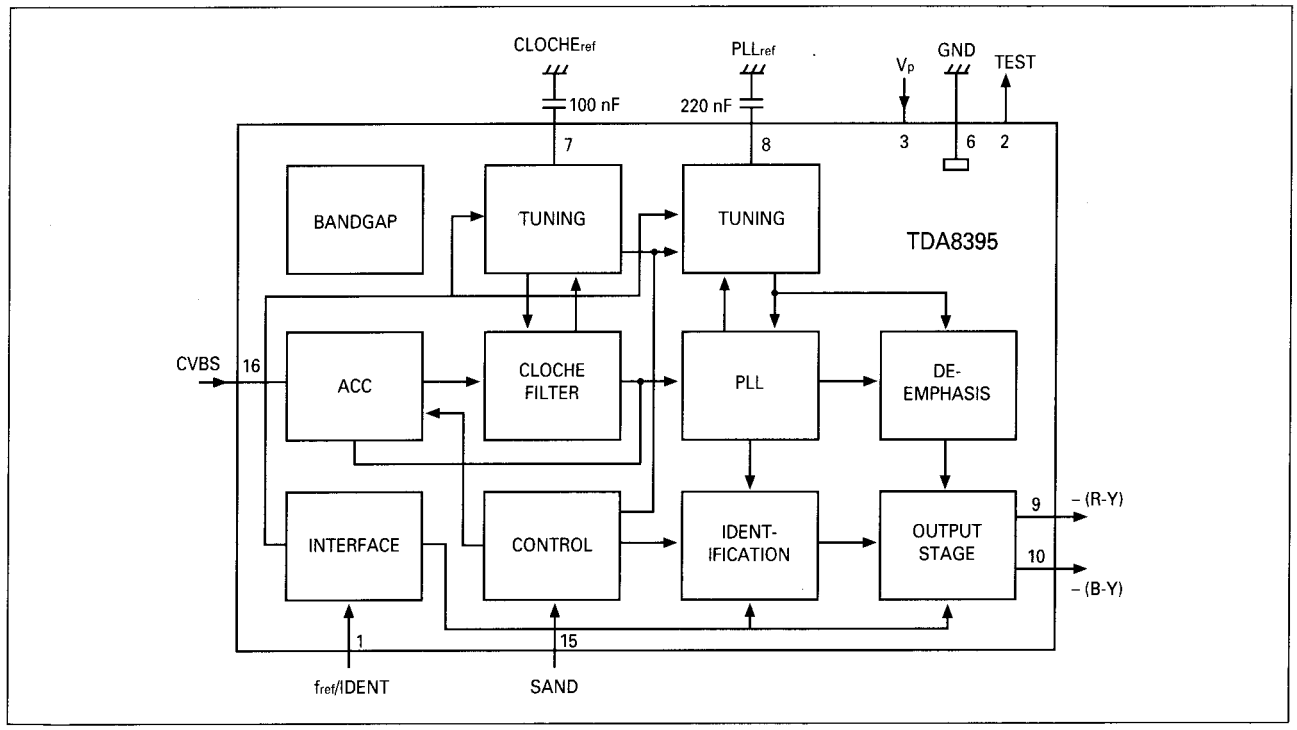
(1) Features

- Fully integrated filters
- Alignment free
- For use with baseband delay

(2) Description

The TDA8395 is a self-calibrating, fully integrated SECAM decoder. The IC should preferably be used in conjunction with the PAL/NTSC decoder TDA8362 and with the switch capacitor baseband delay circuit TDA4661. The IC incorporates HF and LF filters, a demodulator and an identification circuit (luminance is not processed in this IC).
A highly stable reference frequency is required for calibration and a two-level sandcastle pulse for blanking and burst gating.

(3) Block Diagram



(4) Pin Description

SYMBOL	PIN	DESCRIPTION
f_{p1}/IDENT	1	reference frequency input/identification input
TEST	2	test output
Vp	3	positive supply voltage
n.c.	4	not connected
n.c.	5	not connected
GND	6	ground
CLOCHE ref	7	Cloche reference filter
PLL ref	8	PLL reference
-(R-Y)	9	-(R-Y) output
-(B-Y)	10	-(B-Y) output
n.c.	11	not connected
n.c.	12	not connected
n.c.	13	not connected
n.c.	14	not connected
SAND	15	sandcastle pulse input
CVBS	16	video (chrominance) input

CAT24C08P (E² PROM)

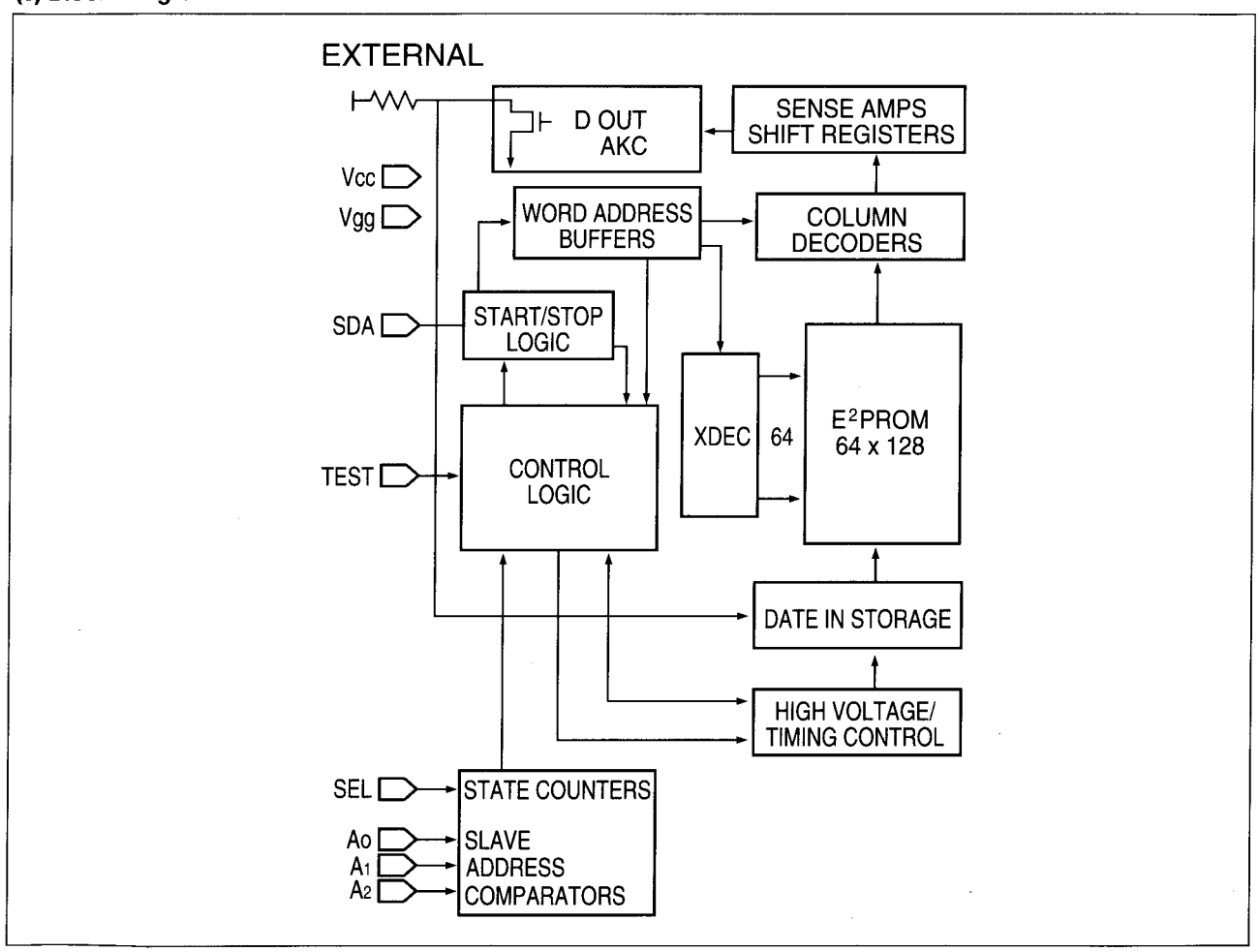
(1) Typical Features

- IC Bus compatible
- Low power CMOS Technology
- 16 Byte page write Buffer
- Self-Timed write cycle with Auto-Clear
- 100,000 program/Erase cycles
- 100 Year Data Retention
- Optional High Endurance Device Available

(2) Description

The CAT24C08P is a 8K bit serial CMOS E²PROM internally organized as 1024x8bits. Catalyst's advanced C MOS technology substantially reduces device power requirements. The CAT 24C08P features a 16 byte page write buffer.

(3) Block Diagram



(4) Pin Description

PIN	SYMBOL	DESCRIPTION
1-3	A0, A1, A2	Device Address Inputs
4	Vss	Ground
5	SDA	Serial Data/Address
6	SCL	Serial Clock
7	TEST	Connect to Vss
8	Vcc	+5V Power supply

SAA5280/5281PE/PH/PR (TELETEXT DECODER)

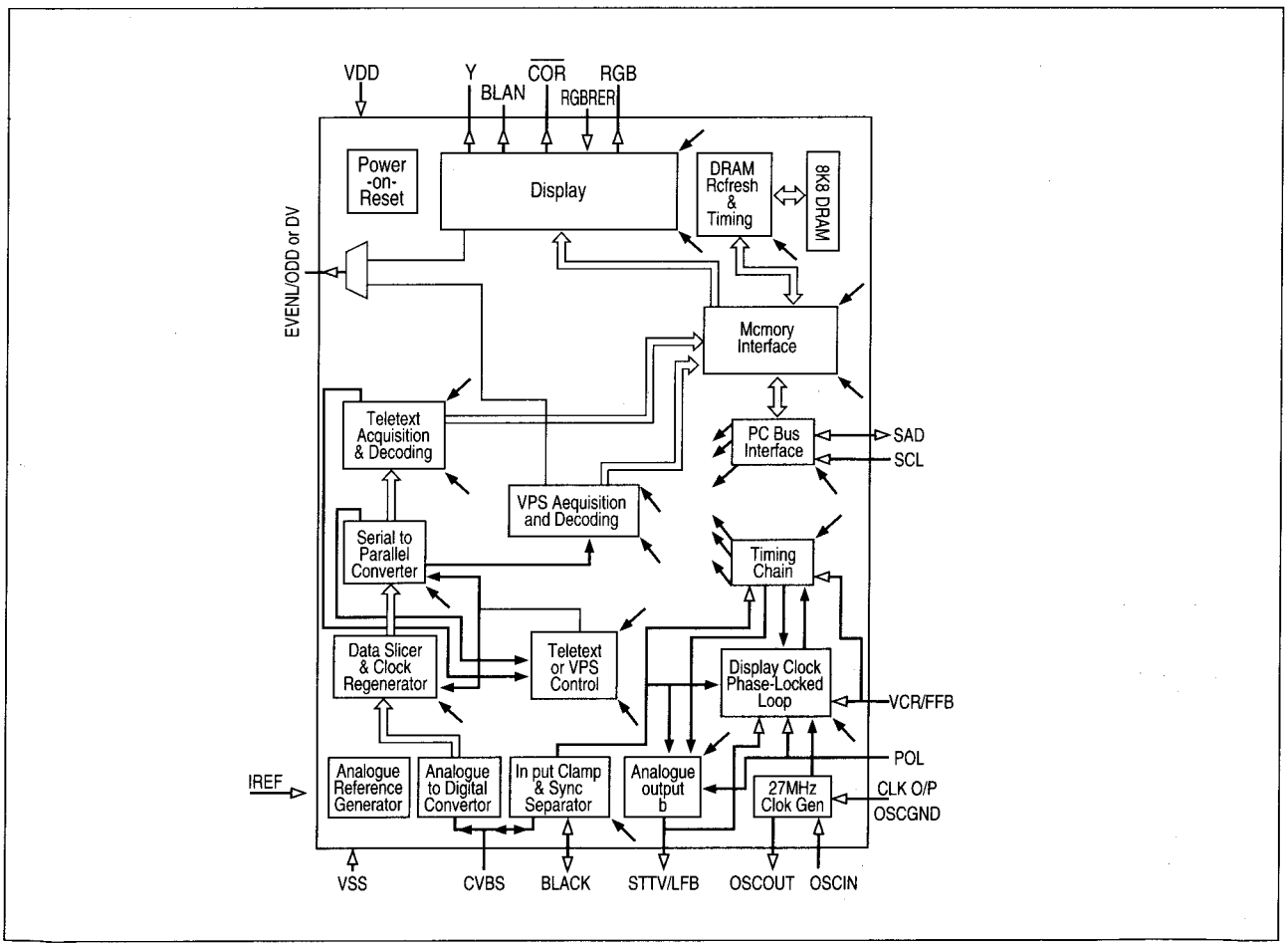
(1) Features

- Complete Teletext and VPS decoding in a single package
- Built in 8K 8 memory for up to 8 page storage
- Single +5V power supply
- Digital Data slicer and display clock phase locked loop reduce peripheral components to a minimum
- Both video and scan related synchronization modes are supported
- 4/8 page acquisition system software compatible with ECCT
- Acquisition and decoding of VPS data
- Separate storage of VPS data (PDC System A) and packet 8/30/2 data (PDC System B) allowing dual standard VPT decoders
- Data valid output available to indicated reception of error-free VPS or packet 8/30/2 data
- RGB interface to standard colour decoder IC's, push/pull output drive. Requires only two external resistors
- Software and hardware compatible with SAA5246 and SAA5248
- Optional storage of packet 24 in display memory
- Separate data and video signal quality detectors. 625/525 video status and language version all readable via I^2C
- VCS to SCS mode for stable 525 line status display
- Automatic Odd/Even output control with manual override
- Control of Display PLL free-run and rolling header via I-C
- Compatible with Philips one-chip TV IC (TDA836x) for scan-locking applications

(2) General Description

IVT1.8 is a single chip Teletext decoder IC for decoding 625 line based World System Teletext transmissions. The device is based on IVT1.0VPS. The device has reception facilities for the 5MHz biphase VPS signal. This is intended for use in video recorders, in particular to implement the VPT facility (VCR programming via Teletext). With suitable software both VPT standards (EBU PDC System A & System B) can be accommodated to allow operation from any European VPT transmission. Automatic processing of packet 26 transmissions is also possible. No external memory is required as an 8K8 DRAM is included on-chip for up to 8 page storage.

(3) Block Diagram



(4) Pin Description

SYMBOL	PIN	DESCRIPTION
VDD	1	+5V supply
OSCOUT	2	27 MHz crystal oscillator output
OSCIN	3	27 MHz crystal oscillator input
OSCGND	4	0V crystal oscillator ground
VSS	5	0V ground
REF+	6	Positive reference voltage for ADC. Connect to ground via 100nF capacitor
BLACK	7	Video black level storage pin. Connect to 0V ground via a 100nF capacitor
CVBS	8	Composite video input pin. Signal should be connected via 100nF capacitor
IREF	9	Reference current input pin. Connect to ground via a 27k resistor
VDD	10	+5V supply
POL	11	STTV/LFB/FFB polarity selection pin
STTV/LFB	12	Sync to TV output pin/line flyback input pin. Controlled by internal register bit
$\overline{\text{VCR}}$/FFB	13	PLL time constant switch/field input pin. Controlled by an internal register bit
VSS	14	Connected to VSS for normal operation
R	15	Dot rate character output of the RED colour information
G	16	Dot rate character output of the GREEN colour information
B	17	Dot rate character output of the BLUE colour information
RGBREF	18	Input DC voltage to define the output high level on the RGB pins
BLAN	19	Dot rate fast blanking output
COR	20	Programmable output to provide contrast reduction of TV for mixed text and picture displays or when viewing newsflash/subtitle pages. Open drain output.
$\overline{\text{ODD}}$/EVEN (OR $\overline{\text{DV}}$	21	In $\overline{\text{ODD}}$/EVEN mode a 25Hz output synchronized to the input CVBS field sync pulses to make a non-interlaced display by adjustment of the vertical deflection currents. In $\overline{\text{DV}}$ mode a VPT data valid signal used to indicate reception of error free VPS or 8/30 format 2 data.
Y	22	Dot rate character output of teletext foreground colour information. Open drain.
SCL	23	Serial clock input for I²C. It can still be driven high during power-down of device.
SDA	24	Serial data port for I²C bus. Open drain output. It can still be driven during power down of the device.
VSS	25	0V ground
I.C.	26-48	Internally connected-do not use.

TDA3653B (VERTICAL DEFLECTION)

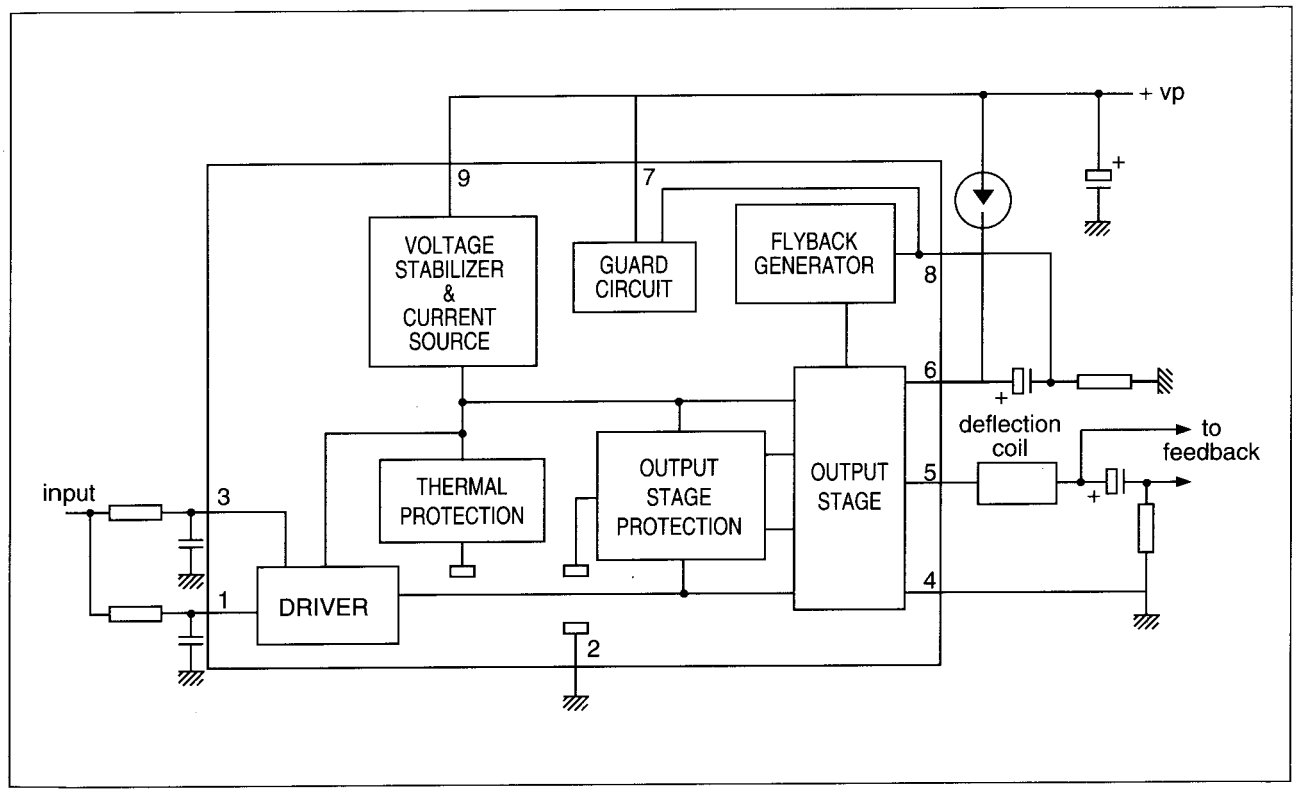
(1) Features

- Driver
- Output stage
- Thermal protection and output stage protection
- Flyback generator
- Voltage stabilizer
- Guard circuit

(2) General Description

The TDA3653B is a vertical deflection output circuit for drive of various deflection systems with currents up to 1.5A peak to peak.

(3) Block Diagram



(4) Pin Description

PIN	DESCRIPTION
1	Input for the driver of the output stage
2	Ground
3	Input of a switching circuit
4	Output stage ground
5	Output
6	Supply for the output stage
7	Guard circuit
8	Flyback generator
9	Supply voltage

TDA3843 (AM DEMODULATOR)

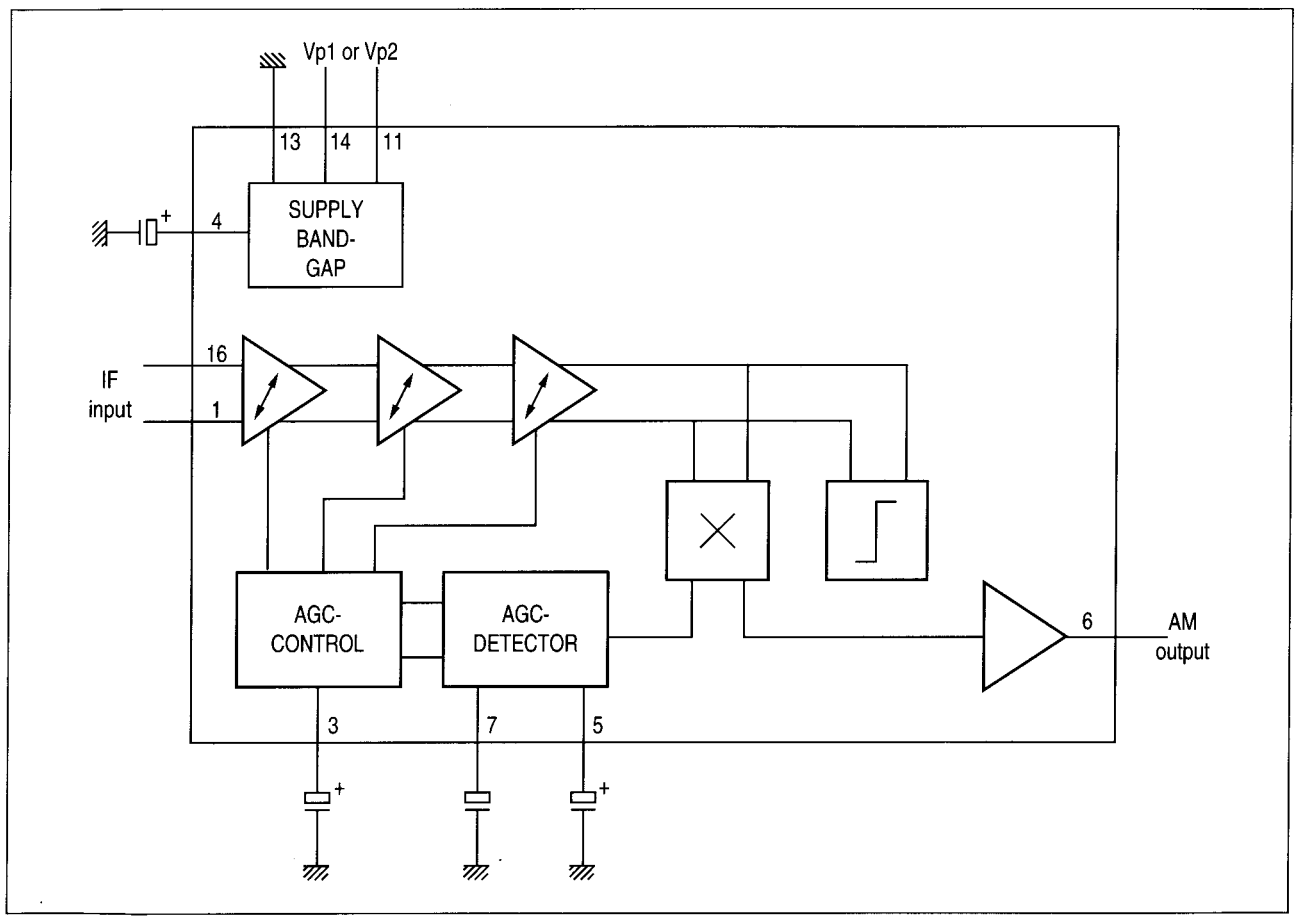
(1) Features

- AC-coupled wideband IF-amplifier
- In-phase wideband AM demodulator without external reference circuit
- Reduced THD figures even for low AF frequencies (typical 1%)
- Stabilizer circuit for ripple rejection and constant output signals
- All pins are ESD protected

(2) General Description

The TDA3843 performs the AM-sound demodulation for the L and L' standard.

(3) Block Diagram



(4) Pin Description

PIN	DESCRIPTION
1, 16	IF input
3	AGC control
4	Supply Band-Gap
6	AF output
5, 7	AGC detector
11	Supply Voltage
13	Ground
2, 8, 9, 10 12, 14, 15	Not Connected

TD4601 (SMPS CONTROLLER)

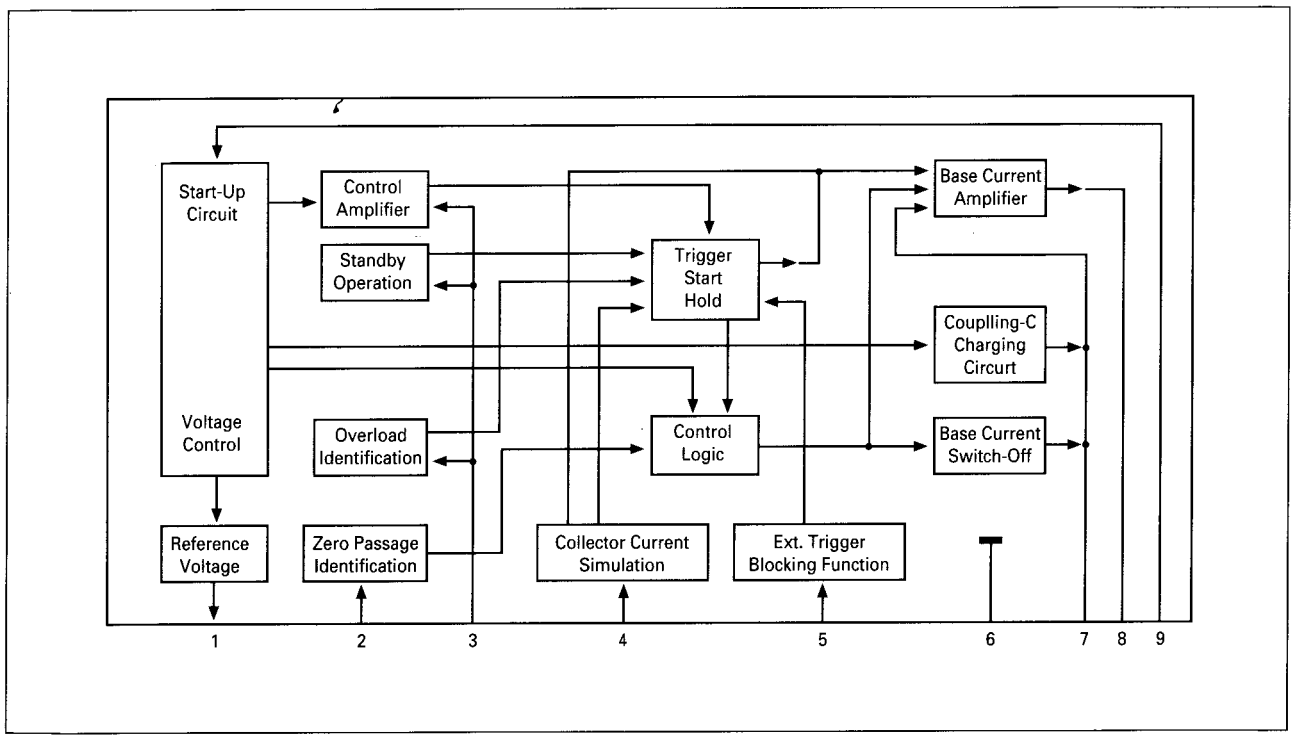
(1) Features

- Direct control of the switching transistor
- Low start-up current
- Reversing linear overload characteristic
- Base current drive proportional to collector current
- Protective circuit in case of disturbance

(2) General Description

The integrated circuit TDA4601 is designed for driving, controlling and protecting the switching transistor in self-oscillation flyback converter power supplies as well as for protecting the overall power supply unit.

(3) Block Diagram



(4) Pin Description

PIN	DESCRIPTION
1	V_{REF} output
2	Zero passage identification
3	Input control amplifier, overload amplifier
4	Collector current simulation
5	Connection for additional protective circuit
6	Ground
7	DC output for charging coupling capacitor
8	Pulse output-driving of switching transistor
9	Supply voltage

TDA7056 (BTL AUDIO OUTPUT AMPLIFIER)

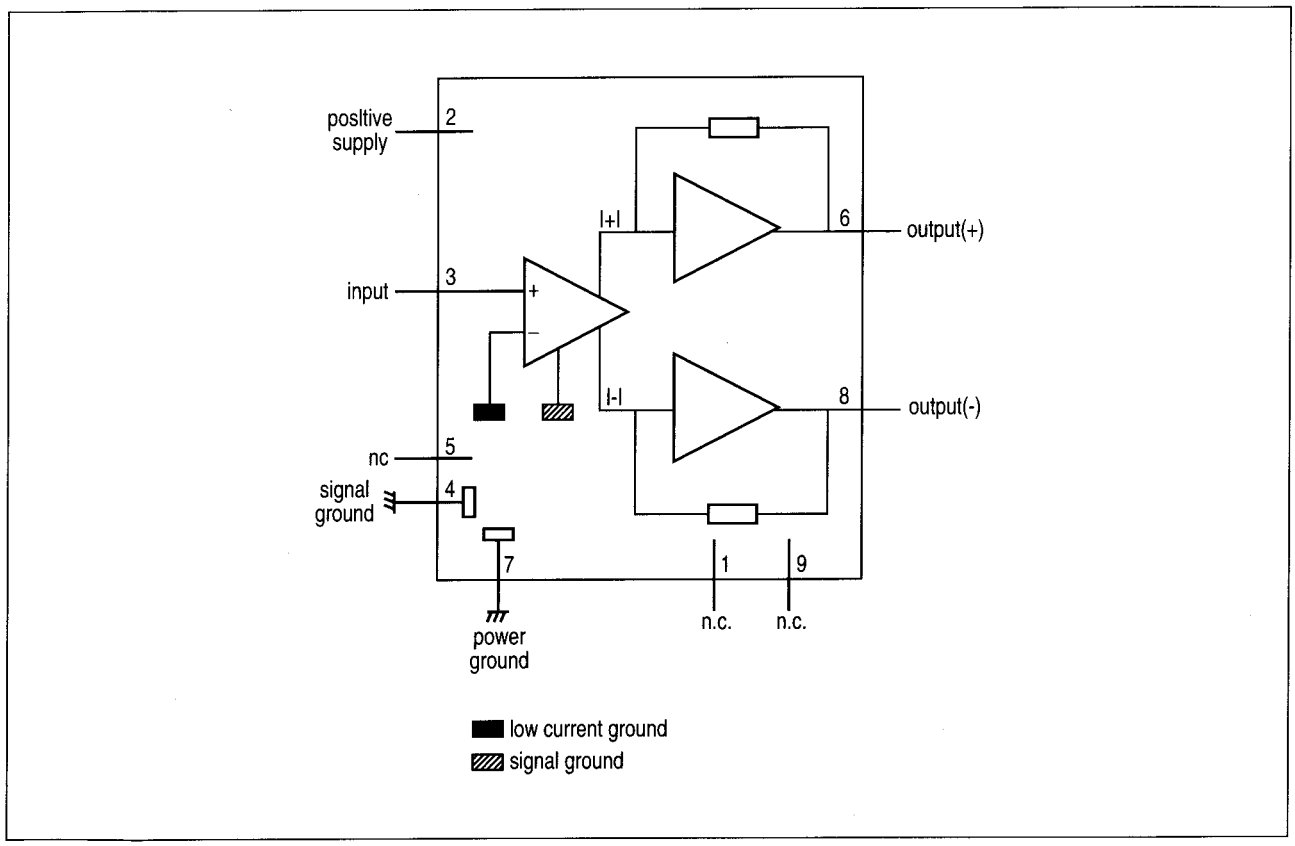
(1) Features

- No external components
- No switch-on/off clicks
- Good overall stability
- Low power consumption
- Short circuit proof
- ESD protected on all pins

(2) General Description

The TDA7056 is a mono output amplifier contained in a 9 pin medium power package. The device is designed for batteryfed portable mono recorders, radios and television.

(3) BLOCK Diagram



(4) Pin Description

PIN	DESCRIPTION
1	n.c.
2	Vp
3	input (+)
4	signal ground
5	n.c.
6	output (+)
7	power ground
8	output (−)
9	n.c.

PCA84C122A (IC REMOCON)

(1) Features

- ROM, RAM and I/O is device dependent
- Two test inputs T0, T1
- 3 Single-level vectored interrupt sources
- 8 bit programmable timer/counter with 5-bit pre-scaler
- Single supply voltage from 2.0V to 5.5V
- On-board oscillator 1MHz to 5MHz
- Operating temperature range -20 to +50°C

(2) General Description

The PCA84C122A is a stand-alone micro controller designed for use in remote control unit for a wide range of applications.

(3) Pin Description

PIN	SIGNAL	DESCRIPTION
3	P00	Standard I/O Port lines, generally used for keypad scanning
2	P01	
23	P02	
22	P03	
10	P04	
11	P05	
14	P06	
15	P07	
19	P10	Standard I/O Port lines, generally used for keypad scanning
18	P11	
17	P12	
16	P13	
1	P14	
24	P15	
12	P16	
13	P17	
4	TP/INT	Test T0 and external interrupt input
5	T1	Test T1
6	RESET	Active HIGH reset, normally tied to Vss because internal Power-on reset can serve the same function
8	XTAL 1	Crystal or ceramic resonator
9	XTAL 2	
21	OUT	Pulse train output pin, capable of sinking 27mA
7	V_{DD}	Power supply
20	Vss	Ground

TC4053BP (TRIPLE 2-CHANNEL MULTIPLEXER/DEMULTIPLEXER)

(1) Description

TC4053B are multiplexers with capabilities of selection and mixture of analog signal and digital signal. TC4051B has 8 channels configuration.

TC4053B has 2 channelx3 configuration. The digital signal to the control terminal turns "ON" the corresponding switch of each channel, with large amplitude (V_{DD}-V_{EE}) can be switched by the control signal with small logical amplitude (V_{DD}-V_{SS}).

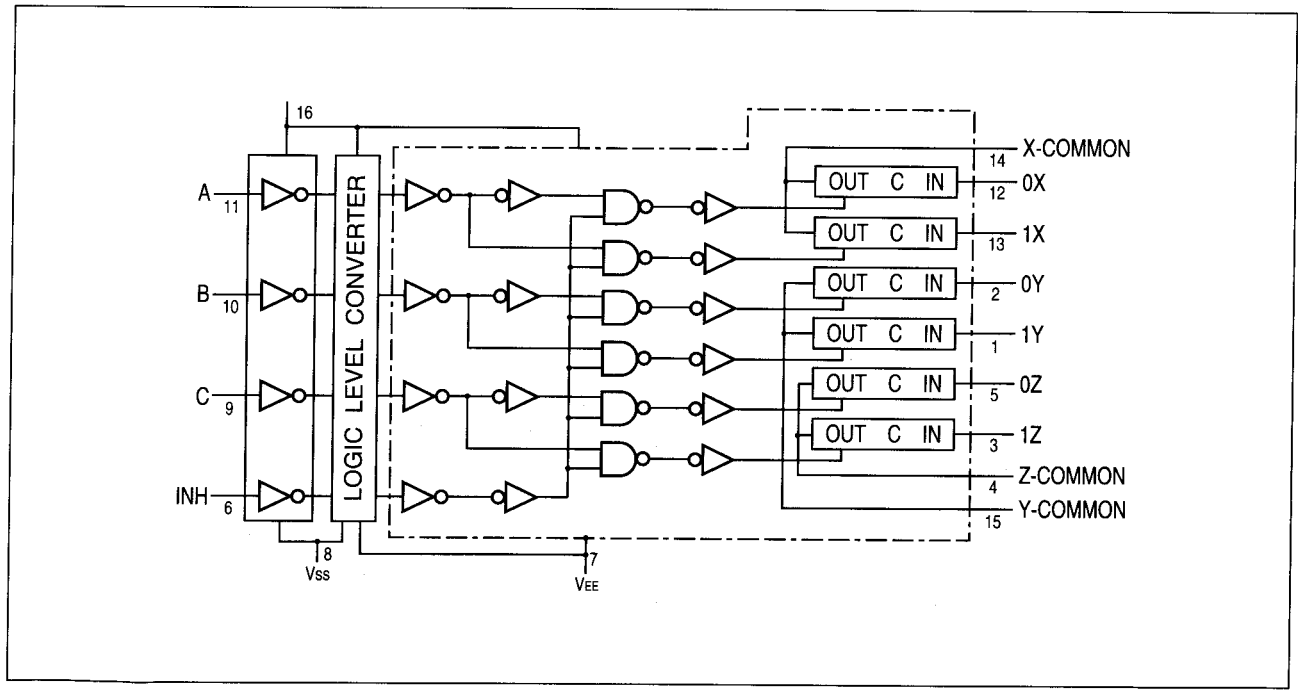
As the ON-resistance of each switch is low, these can be connected to the circuits with low input impedance.

(2) Truth Table

CONTROL INPUTS				"ON" CHANNEL
INHIBIT	C	B	A	TC4053B
L	L	L	L	0X, 0Y, 0Z
L	L	L	H	1X, 0Y, 0Z
L	L	H	L	0X, 1Y, 0Z
L	L	H	H	1X, 1Y, 0Z
L	H	L	L	0X, 0Y, 1Z
L	H	L	H	1X, 0Y, 1Z
L	H	H	L	0X, 1Y, 1Z
L	H	H	H	1X, 1Y, 1Z
H	*	*	*	NONE

* DON'T CARE

(3) Block Diagram



■ CP-330 CIRCUIT DESCRIPTION

The function of the circuits used in CP-330 are described in this chapter. For the component numbers used in this description, refer to the circuit diagram.

1. Small signal part with TDA8362

TDA8362 is realized in BIMOS process; the high frequency bipolar process is used for video processing and the MOS process is used for the digital part.
TDA8362 combines all small signal functions, except the tuning, required for a colour television receiver.
Newly developed internal circuitry, such as integrated luminance delay line, chroma bandpass and trap, PLL sound demodulator and switches, reduce the number of required pins, external components and alignments.
The reference tuned circuit is the only remaining alignment for this 52 pins (S-Dil) TV-processor.
The alignment-free SECAM add-on colour decoder circuit (TDA8395) can be used for applications with automatic standard switching.
The internal functions of TDA8362 are
- Completely symmetrical AC-coupled vision I.F. amplifier and synchronous video demodulator
- A.G.C. detector suited for positive and negative modulation
- Tuner A.G.C., for PNP tuners
- Sample and hold A.F.C. circuit, with internal 90° phase shift
- Video pre-amplifier
- Inputs and switches for external audio,CVBS and S-VHS signals
- Sound I.F. limiter, automatic PLL demodulator and pre-amplifier with DC volume control.
- Separate supply pin to start the horizontal circuitry from the mains rectifier
- Horizontal synchronization circuit with 2 control loops
- Vertical synchronization (divider system), automatic 50/60Hz adaption
- Vertical and horizontal drive circuits
- PAL/NTSC colour decoder,with automatic standard switching
- Chroma filters (bandpass and trap) with automatic system addaption
- Luminance delay line
- Peaking circuit is the luminance channel
- Mute function
- X-ray protection possibility.

1.1. Vision I.F. amplifier, video demodulator and identification circuit.

- The vision I.F. amplifier consists of three AC-coupled differential stages.
  The gain control per stage is more than 20dB, which results in a total gain control of 64dB min. The amplifier is completely symmetrical, which has the advantage of a less critical application; the I.F. amplifier inputs can be coupled directly to the SAW-filter output.
  The input impedance is 2kΩ in parallel with 3pF.
  The input sensitivity for on-set of A.G.C. is 70μV (typ.), for I.F. frequencies between 38.9MHz and 58.75MHz.
- The reference carrier for the video demodulator is obtained via passive regeneration of the picture carrier. The reference tuned circuit is connected between pin 2 and 3.
  The IC and handle positive and negative modulated signals, the polarity of the demodulation can be switched at pin 1 (open = neg. modulation, high = pos. modulation).
- A transmitter identification circuit operates independently of the synchronization circuit, to allow separate use of the front-end section and the display section of the TDA8362.

1.2. A.G.C., tuner A.G.C. and A.F.C.

- The A.G.C. detector operates at top-sync level for signals with negative modulation and at peak-white level for positive modulated signals.
  This A.G.C. detector is gated for negative modulated signals to reduce sensitivity to impulsive noise.
  The time constant capacitor (C109) is connected externally at pin 48.
- The tuner AGC take-over point can be set by adjusting the DC-voltage at pin 49, with a potentiometer of 10kΩ (VR101).
  The tuner A.G.C. (pin 47) is an open collector output stage with an output swing of 2mA min. the voltage swing, required by the tuner, can be obtained with an external resistor network, connected at pin 47. Pin 47 may rise 2V above the actual supply voltage level for min. gain.
- The A.F.C. circuit is driven by the same reference signal as the video demodulator. A sample and hold circuit avoids video bread-through from the video demodulator to the A.F.C. voltage.
  The A.F.C. output voltage range is from 0 to 8V.

1.3. Sound circuit

The sound carrier which is present at the video output pin 7 is fed via the sound bandpass to the sound input at pin 5. This has a double function; sound I.F. input (AC) and volume control (DC). The filtered intercarrier signal is fed to an amplifier/limiter circuit and demodulated by a PLL demodulator. This PLL demodulator tunes automatically to the incoming frequency, hence no alignment is required. The A.F. signal (pin 50) has an amplitude of 700mVrms at maximum volume control setting (f = ±50kHz). This volume control voltage is between 0 and 5V.

The de-emphasis capacitor (C605) is connected externally at pin 1. The noncontrolled audio signal (Peri-television) is also obtained from pin 1 via a amplifier buffer stage (Q604 & Q601) and has an amplitude of 500mVrms (f = 300kHz).

Audio input signal from an external source with an amplitude up to 350mVrms (+/– 6dB) can be fed to pin 6. The audio switch is controlled via the pin 16, as described in Chapter 1.8. The volume control operates upon the external audio input signal, when TDA8362 is switched to the external mode.

1.4. Horizontal and vertical synchronization

- The incoming video signal, pin 15 for the video signal is fed to the synchronization separator circuit.
  Internally the black level and the top sync level are detected, next the synchronization pulses are amplified to a fixed level and sliced at 50% of that level. In this way a very good synchronization performance is obtained.
  The separated synchronization pulses are fed to the first phase detector circuit and to the coincidence detector. The components which determine the loop gain of the first phase detector are connected at pin 40 (C401, CC401 and RC401). The coincidence detector is only used to detect whether the line oscillator is synchronized, not for transmitter identification.
  The line oscillator is running at twice the line frequency and locked to the X-tal controlled oscillator frequency of the colour decoder, consequently no adjustment is required. The free-running frequency has a maximum deviation of 2% compared to the nominal frequency.
  The second phase detector generates the pulses for the horizontal driver stage (pin 37). The loop filter capacitor (C511) is connected at pin 39. Horizontal shift can be obtained by a potentiometer and series resistor (VR401) connected at pin 39.
  The TDA8362 has a separate start-up circuit for the horizontal oscillator (pin 36). In case this feature is used for starting the horizontal deflection the resistor connected at the base of the horizontal driver transistor must be connected to the start supply as well (pin 37 is an open collector). For applications which do not require a start-up function pin 36 must be connected to the main supply voltage (pin 10).
- The vertical drive pulses (pin 43) are generated by a divider circuit. The vertical ramp generator components are connected at pin 42. Capacitor C308 is charged via resistors (R311, VR302, R308) connected to +33V AC and DC feedback voltage from the vertical deflection stage must be connected at pin 41.

1.5. Integrated video filters

- The TDA8362 has an alignment-free internal chroma bandpass and trap circuit. These filters are realized by means of gyrator circuits and they are tuned by tracking to the frequency of the X-tal controlled oscillator.
- The luminance delay and the delay required for peaking are also realized by gyrator circuits. The peaking circuit can be controlled by μ-processor output voltage.

1.6. Colour decoder.

- The colour decoder contains an alignment-free X-tal oscillator, a killer circuit and the colour difference signals demodulators.
  The decoder adapts automatically for PAL and NTSC signals. With the SECAM add-on decoder TDA8395 an alignment free multi-standard decoder with automatic selection can be built. This makes the application of the TDA8362 very flexible.
  The following applications are possible:
  - PAL-only
    Connect one or two crystals to the IC (when just one crystal is used the other crystal pin has to be connected to ground via a resistor) and the hue control pin to the positive supply via a resistor of about 30 kΩ. In this condition the decoder will not search for NTSC signals.
  - PAL/NTSC
    Connect one or two crystals to the IC and supply a control voltage between 0 and 5 V to the hue control pin. The decoder will identify PAL and NTSC signals at one or two frequencies. For the reception of the PAL-N and the PAL-M standard the two 3.6 MHz X-tals must be connected to pin 34. The switching between the X-tals must be made externally.
  - PAL/SECAM
    The chroma input signal for the SECAM decoder must be the same as that of the PAL decoder. This could be realized by means of an external switch which is connected in parallel with the internal video switch. In the TDA8362 we have a better alternative. When the NTSC option is not required the output signal of the switch can be obtained from the hue control input when this input is connected to the positive supply line via a suitable resistor.

- PAL/SECAM/NTSC
  In this case the hue control must be active so that the previous application is not possible. Therefore an external video switch has to be added for this application.

In CP-330, the first three applications are possible, but in PAL/NTSC application NTSC-M is available in external video only.The burst phase detector locks the X-tal oscillator with the burst signal.
Two gain modes provide an increased catching range when the PLL is un-locked and low ripple voltage and good noise immunity when the PLL is locked. The burst phase detector operates during the burst key period only, to prevent the PLL from being disturbed by the chroma signal.
The killer circuit switches-off the R-Y and B-Y demodulators at too low input signal condition (burst'amplitude). Proper hysteresis prevent constant on/off switching at a certain input level.

1.7. R.G.B output and input circuits

The colour difference signals are matrixed with the luminance signal to obtain the R,G,B output signals (pin 18, 19 and 20). Linear amplifiers have been chosen to interface external R,G,B signals (pin 22, 23 and 24) coming from the Peritelevision connector. The contrast and brightness control operate both on internal and external signals. The data insertion pin 21 has a second detection level at 4V. Above this level the R,G,B outputs are blanked. In this way on-screen display (O.S.D.) signals can be supplied directly to the inputs of the video output stages without any interaction to the RGB outputs of the colour decoder part of the TDA8362.

1.8. Switches for external audio, video

The audio and video switches are controlled via the pin 16, according to the following table:

Level Pin 16	Int. Video	Ext. Video	Int Audio	Ext Audio
DC < 0.5V	ON	OFF	ON	OFF
DC > 7.5V	OFF	ON	OFF	ON

2. Tuner

The board of CP-330 is designed to use the tuner type VTSS-7SZ3, TEKE4-073A, DET-7BZ.
These have combined VHF/UHF (DET-7BZ is UHF only), electronic tuning and band switching.
They can be used in applications with voltage synthesis tuning system.
The tunes fulfill all requirements concerning radiation, signal handling capacity and immunity for radiated interferences.

TYPE	STANDARD	PIF	BAND/CHANNEL
VTSS-7SZ3 (SHARP) 2900KKC (DAEWOO)	B/G	38.9MHz	VHF-1 : CH2-CH4 S1'-S3', S1-S2 VHF-3 : S3-S10 CH5-CH12 S11-S20 UHF : CH21-CH69
TEKE4-073A (J. ALPS) TECC2889 VA15C(SEM)	B/G	38.9MHz	VHF-1 : CH2-CH4 S1'-S3', S1-S10 VHF-3 : CH5-CH12 S11-S20 S21-S41 (Hyper) UHF : CH21-CH69
DET-7BZ (DAEWOO)	I	39.5MHz	UHF : CH21-CH69

3. SECAM decoder TDA8395

The TDA8395 is an alignment-free SECAM colour decoder and can be used in conjunction with the TDA8362. It includes the Cloche filter, demodulator and identification circuit. The TDA8395 application needs very few external components.

The cloche filter is a gyrator-capacitor type filter. Its resonance frequency is controlled during the calibration period and offset during scan for the right resonance frequency. The required reference frequency for calibration must be connected at pin 1 and obtained from the TDA8362 (pin 32). The two (or three-) level sandcastle pulse has to be connected at pin 15(TDA8362 pin 38) and used for generation of the blanking periods and provides clock information for the identification circuit.

The chroma signal at pin 16 connected to pin 27 of the TDA8362 is demodulated by a PLL demodulator, which uses the reference frequency and a bandgap reference to force the PLL to the desired demodulation characteristic.

Digital line identification is implemented to check the incoming signal for SECAM. IF SECAM is detected and pin 1 will sink a current of 150μA. Together with the TDA8362 the voltage at this pin will become high (5.5V). In this case the colour difference signal outputs will be switched on. These outputs will be disconnected and high-ohmic when no SECAM is detected for two frame periods the demodulator will be initialized before trying again.

4. Baseband delay line TDA4661

The TDA4661 are integrated baseband delay lines of 64μS for colour television receivers. It can be connected to the TDA8362 and TDA8395 without the need of switches and alignments. The TDA4661 consists of two main blocks.

- Two comb filters with a delay time of 64μsec in switched capacitor
- Internal clock generation of 3MHz, line locked via the sandcastle pulse

TDA4661 operates according to the mode demanded by the colour transmission standard. In PAL mode it operates as a geometric adder to satisfy the requirements of PAL demodulation, in NTSC mode it reduces cross-colour interference (comb-filtering) and in SECAM mode the delay line repeats the colour difference signal on consecutive horizontal scan lines.

The colour difference signals are AC-coupled to pin 14 and 16 and clamped by the input stages. The internal clock drives the delay lines to obtain the required 64μsec. The clock pulses are derived from a 6MHz Current Controlled Oscillator which is line locked via a PLL with the sandcastle pulse, connected at pin 5. Sample and hold low pass filters suppress the clock signal. The delayed and un-delayed signal are added buffered and fed to the output pins 11 and 12.

5. Sound output stage TDA7056.

TDA7056 is a single A.F. output amplifier. It needs no peripheral components. It makes use of the Bridge-Tied-Load(BTL) principle. It has, at the same output voltage, a higher output power compared to a conventional single ended output stage. The TDA7056 delivers an output power of 1W into a loudspeaker load of 8Ω with 6V supply voltage and 3W into a 16Ω loudspeaker with 11V supply, without the need of an external heatsink. The gain is internally fixed at 40dB.

Special attention has been given to switch-on/off click suppression, and it has a good overall stability. The IC is short-circuit proof at all input conditions. Pin 50 of TDA8362 is AC coupled to the input pin 3 of TDA7056 via a resistor divider (R605 and R606) to adapt the voltage levels. The proper de-emphasis is obtained via capacitor C605 at pin 1 of the TDA8362.

6. Vertical output stage with TDA3653B

The TDA3653B is a vertical deflection output circuit for drive of various deflection systems with currents up to 1.5A peak-to-peak.

Pin 43 of TDA8362 is connected to pin 1, the input for the driver of the output stage via R305.

During scan the capacitor between pin 6 and 8 (C308) is charged. When the flyback starts and the voltage at the output pin 5 exceeds the supply voltage at pin 9, the flyback generator is activated. The supply voltage is then connected in series, via pin 8, with the voltage across capacitor C308 during the flyback period. This implies that the supply voltage can be reduced to the required scan voltage plus the saturation voltage of the transistors.

The vertical synchronization information required by a μ-processor, available at pin 6 is obtained via R307, D303. Futhermore transistor QT08 has been added for de-interlace of Teletext signals.

7. Horizontal Deflection stage

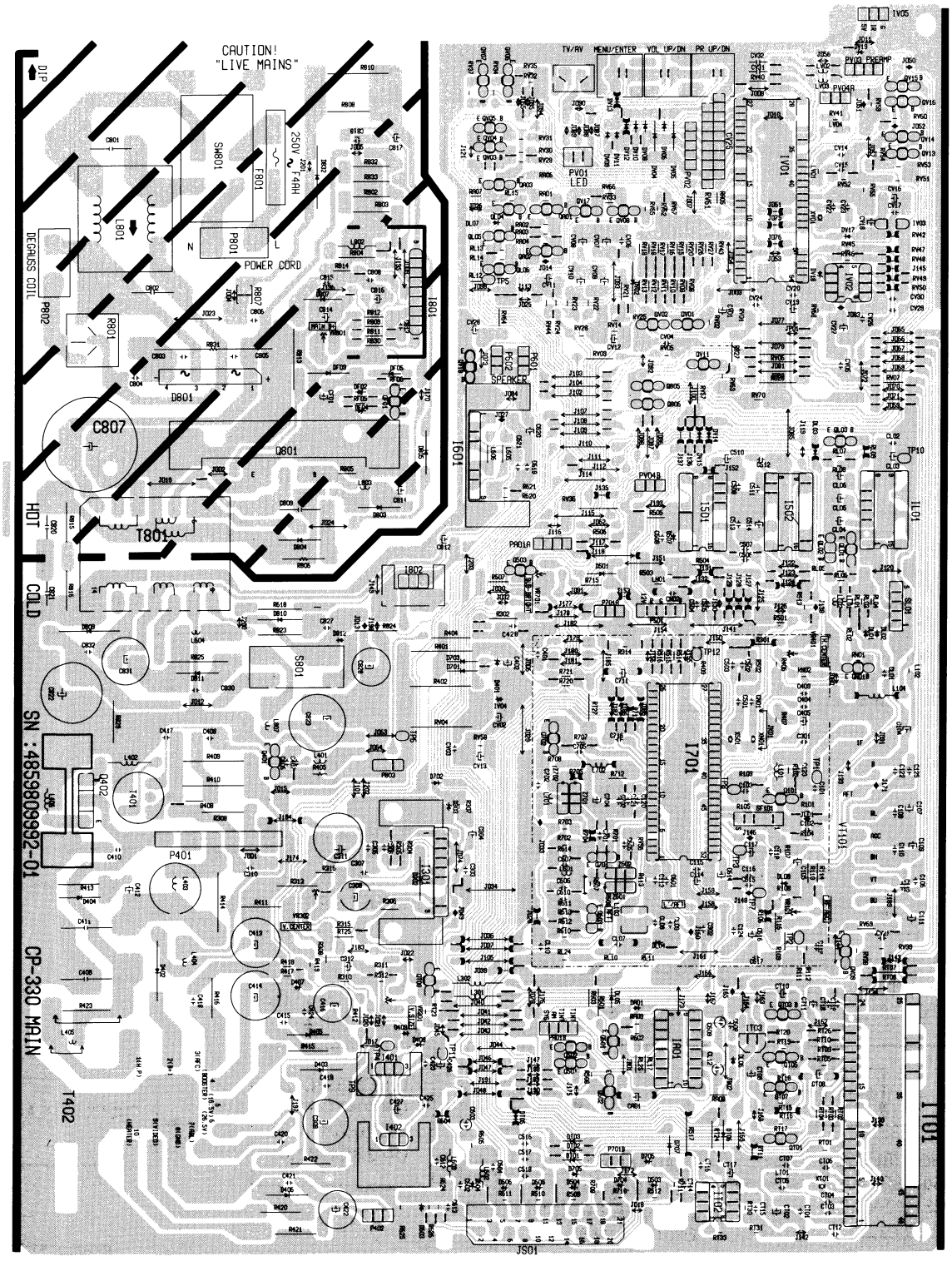
The horizontal drive pulses, pin 37 of TDA8362, are connected to the base of driver transistor Q401 via resistor R403.
The base current of the driver transistor is supplied via RC427 (pin 37 is an open collector output).
The driver transformer (T402) drives deflection transistor Q402.
T401 is EHT transformer (Flyback transformer) and generates the EHT –, focus- and G2-voltage, required by the picture tube. Furthermore the +185V supply and heater voltage are derived from this transformer.
At pin 7 the beam current information is measured via resistor R416. This information is used for reducing the contrast at too high beam currents (via D707).
The flyback voltage is clipped between +8V and ground by diodes D408, D409 to obtain a well shaped flyback pulse for feedback to the TDA8362 (pin 38).
A horizontal synchronization information required by a possible μ-processor is obtained via R419 & D406 connected at pin 3 of the FBT.

8. Power supply with TDA4601.

TDA4601 is designed for driving, controlling, and protecting the switching transistor in flyback converter power supplies during start-up, normal, and overload operation as well as during disturbed operation.
TDA4601 drives as start voltage ($16V_{DC}$) being supplied at pin 9 of TDA4601.
Continually, voltage ($180V_{AC} \rightarrow 13V_{DC}, \rightarrow 270V_{AC} \rightarrow 20V_{DC}$) is supplied at pin 6 of SMPS transformer (TSM-4020).
The function of power ON/OFF is activated by using switching transistor Q801 (2SD1555).
The pin 1 of TDA4601 is REFERENCE VOLTAGE PIN, pin 2 is AIR GAP PORT, pin 3 is the ADJUSTMENT PORT of secondary B+ level, pin 4 is AMP CONTROL PORT, pin 7 is the ELECTRIC DISCHARGE PORT of switching transistor, and pin 8 is OUTPUT VOLTAGE to drive switching transistor.
The voltage of secondary main B+ adjusts to $104V_{DC}$ to make use of variable Volume (VR801) at picture control maximum.
The protective operating mode of TDA4601 is that the base current shut-down activated by the control logic clamps the output of pin 7 to $1.6V_{DC}$.
As a result, the drive of switching transistor is inhibited.
This protective measure is enabled if the supply voltage at pin 9 reaches a value 6.7V.
TDA4601 has self-protective function.

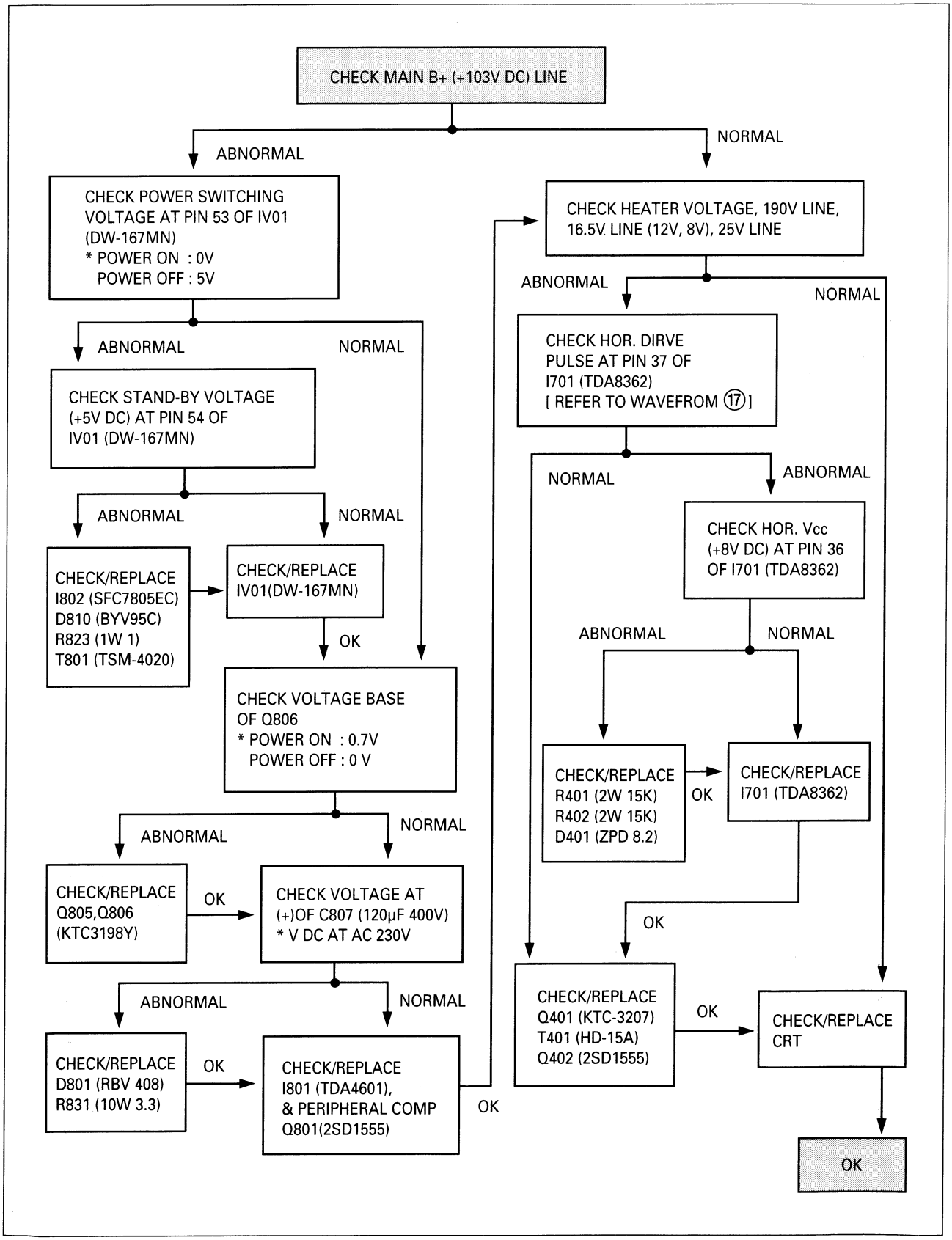
■ PRINTED CIRCUIT BOARDS

■ MAIN PCB

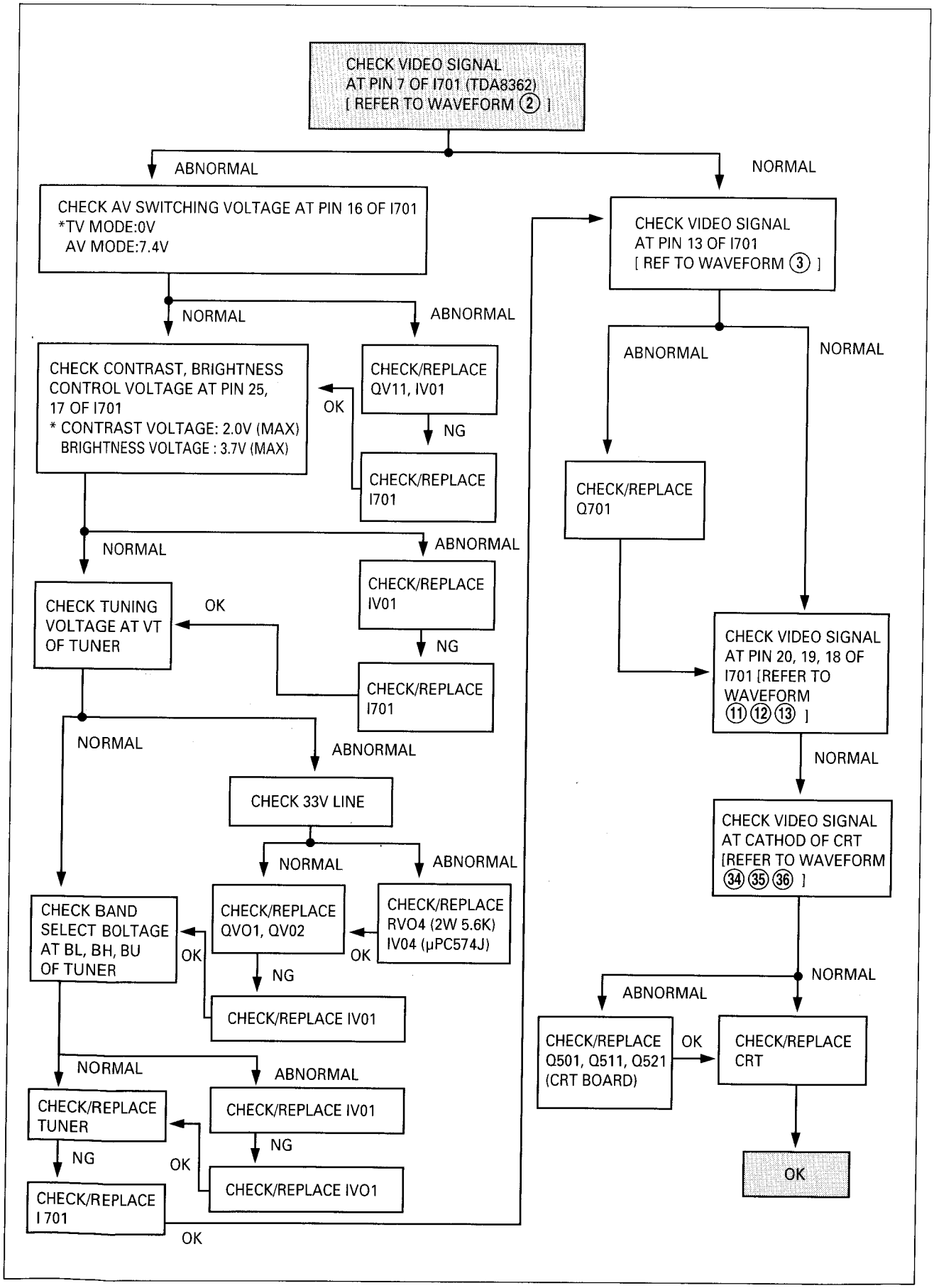


■ TROUBLE SHOOTING CHARTS

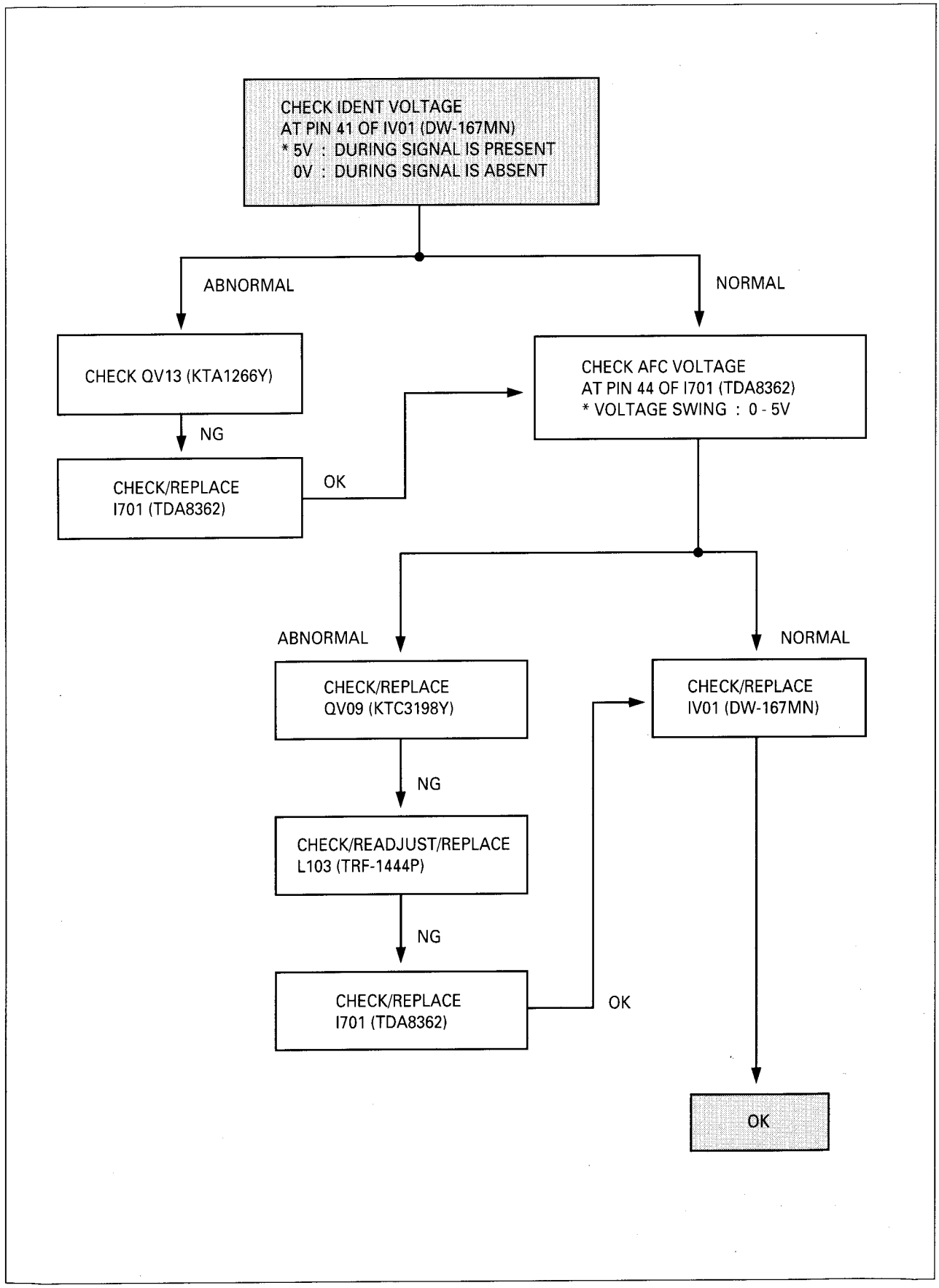
■ NO RASTER



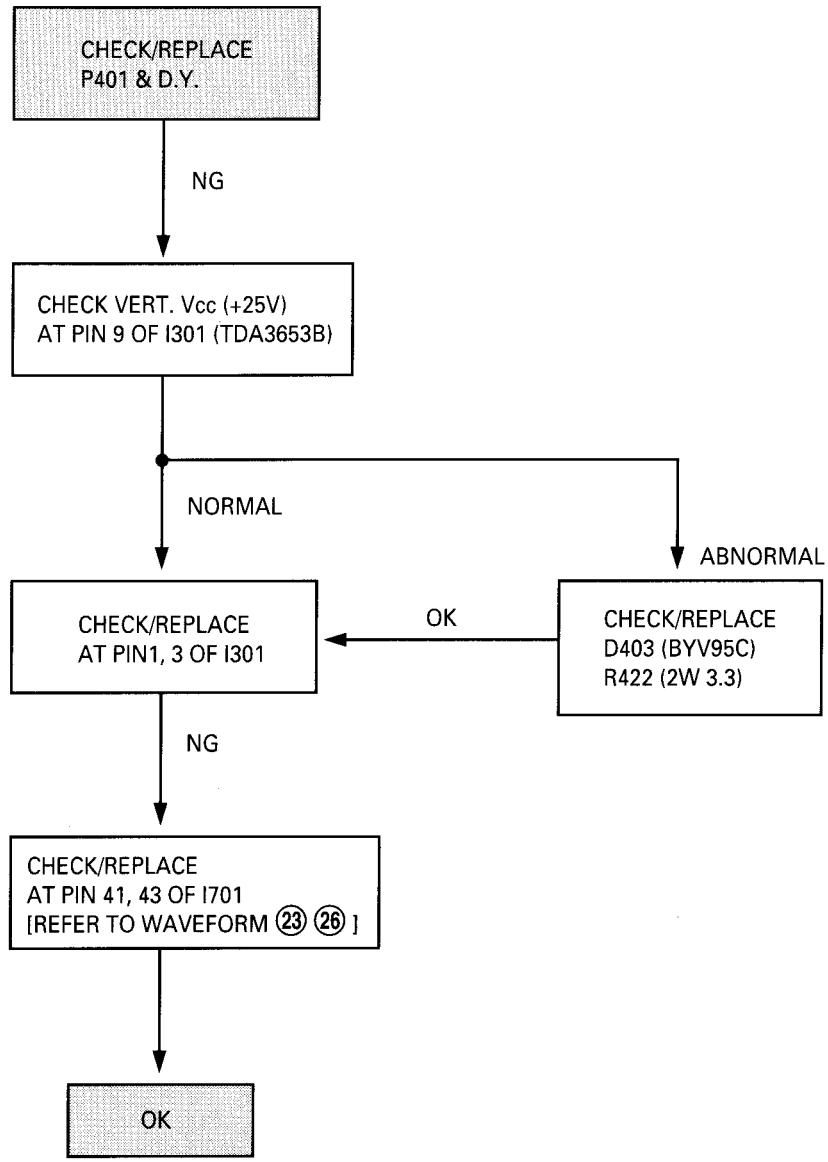
■ NO PICTURE(RASTER OK)



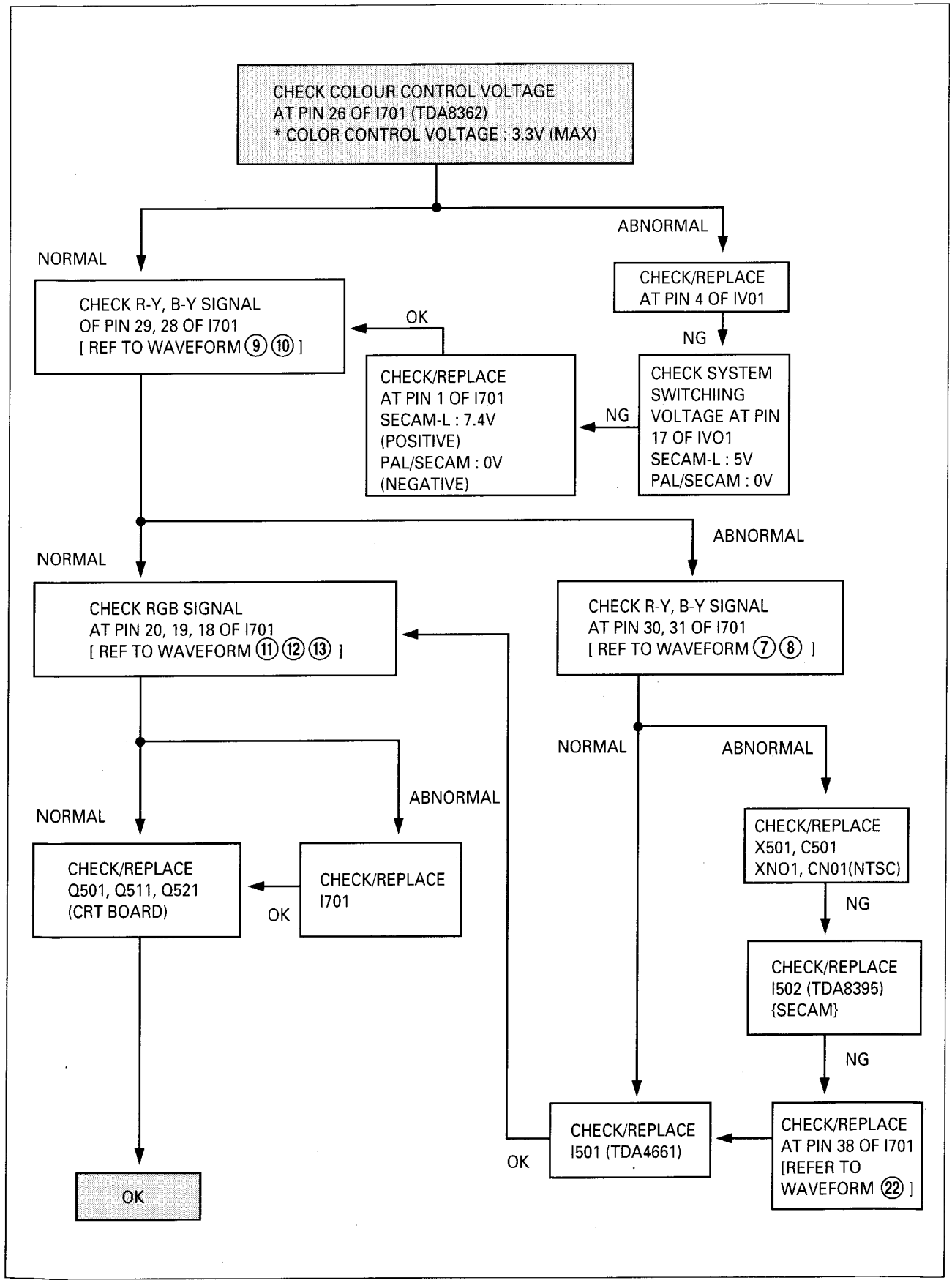
■ AUTO SEARCH TROUBLE (CHANNEL SKIP)



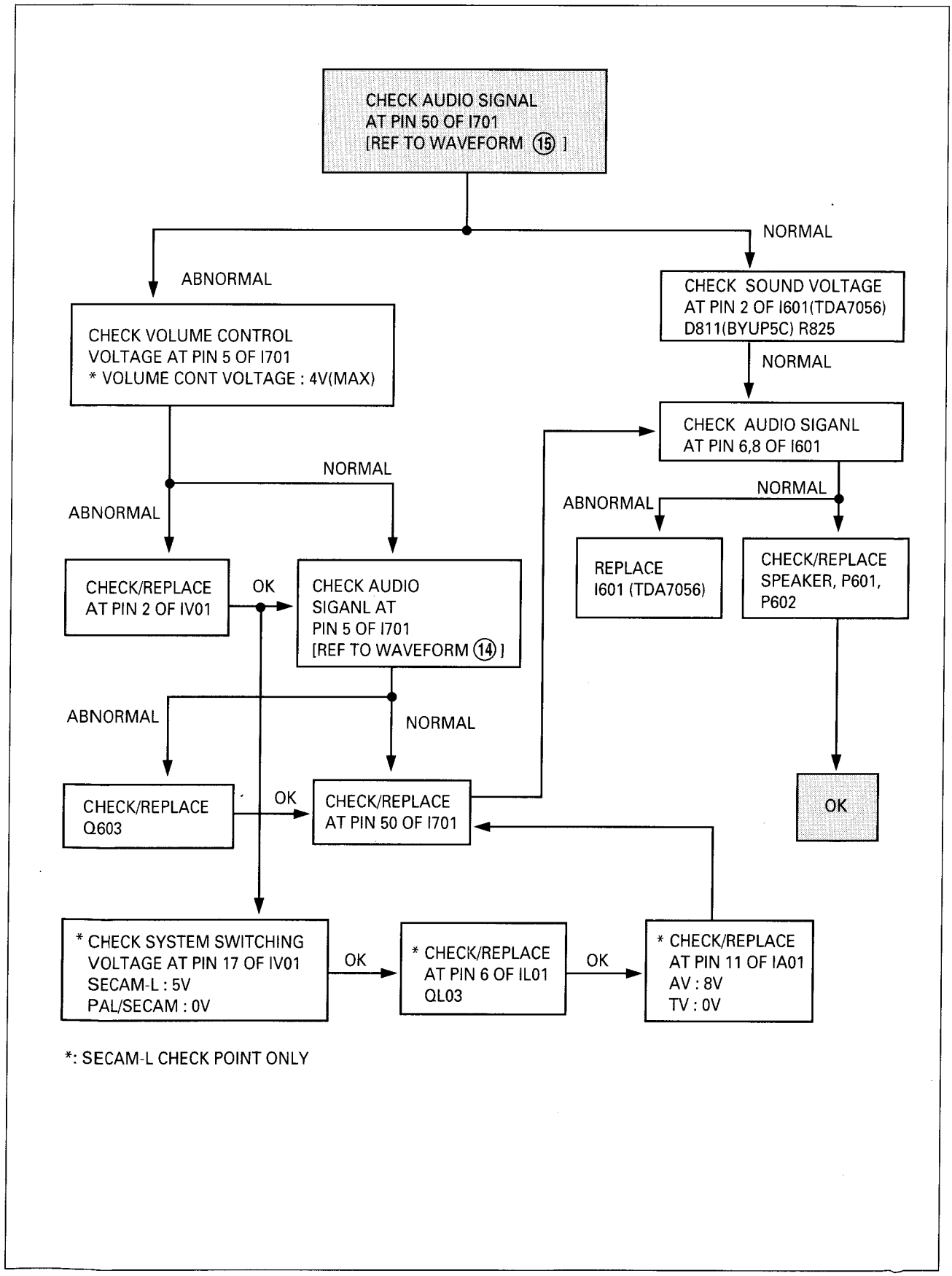
■ NO VERTICAL SCANNING (ONE HORIZONTAL LINE ON SCREEN)



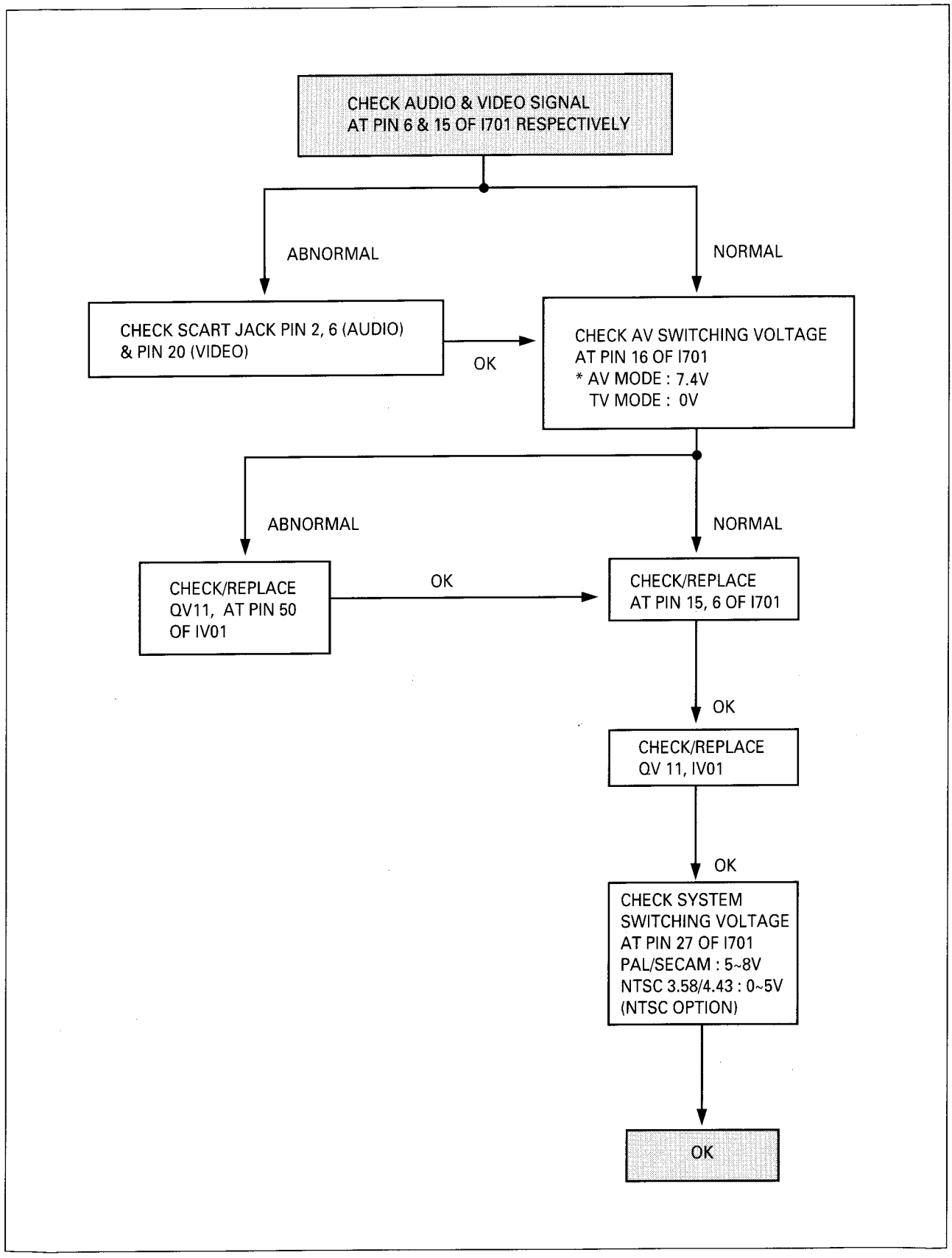
■ NO COLOUR


CHECK COLOUR CONTROL VOLTAGE
AT PIN 26 OF I701 (TDA8362)
* COLOR CONTROL VOLTAGE : 3.3V (MAX)
NORMAL
ABNORMAL
CHECK R-Y, B-Y SIGNAL
OF PIN 29, 28 OF I701
[REF TO WAVEFORM ⑨ ⑩]
OK
CHECK/REPLACE
AT PIN 1 OF I701
SECAM-L : 7.4V
(POSITIVE)
PAL/SECAM : 0V
(NEGATIVE)
CHECK/REPLACE
AT PIN 4 OF IV01
NG
CHECK SYSTEM
SWITCHIING
VOLTAGE AT PIN
17 OF IVO1
SECAM-L : 5V
PAL/SECAM : 0V
NG
NORMAL
ABNORMAL
CHECK RGB SIGNAL
AT PIN 20, 19, 18 OF I701
[REF TO WAVEFORM ⑪ ⑫ ⑬]
CHECK R-Y, B-Y SIGNAL
AT PIN 30, 31 OF I701
[REF TO WAVEFORM ⑦ ⑧]
NORMAL
ABNORMAL
NORMAL
ABNORMAL
CHECK/REPLACE
Q501, Q511, Q521
(CRT BOARD)
OK
CHECK/REPLACE
I701
CHECK/REPLACE
X501, C501
XNO1, CN01(NTSC)
NG
CHECK/REPLACE
I502 (TDA8395)
{SECAM}
NG
OK
CHECK/REPLACE
I501 (TDA4661)
CHECK/REPLACE
AT PIN 38 OF I701
[REFER TO
WAVEFORM ㉒]
OK

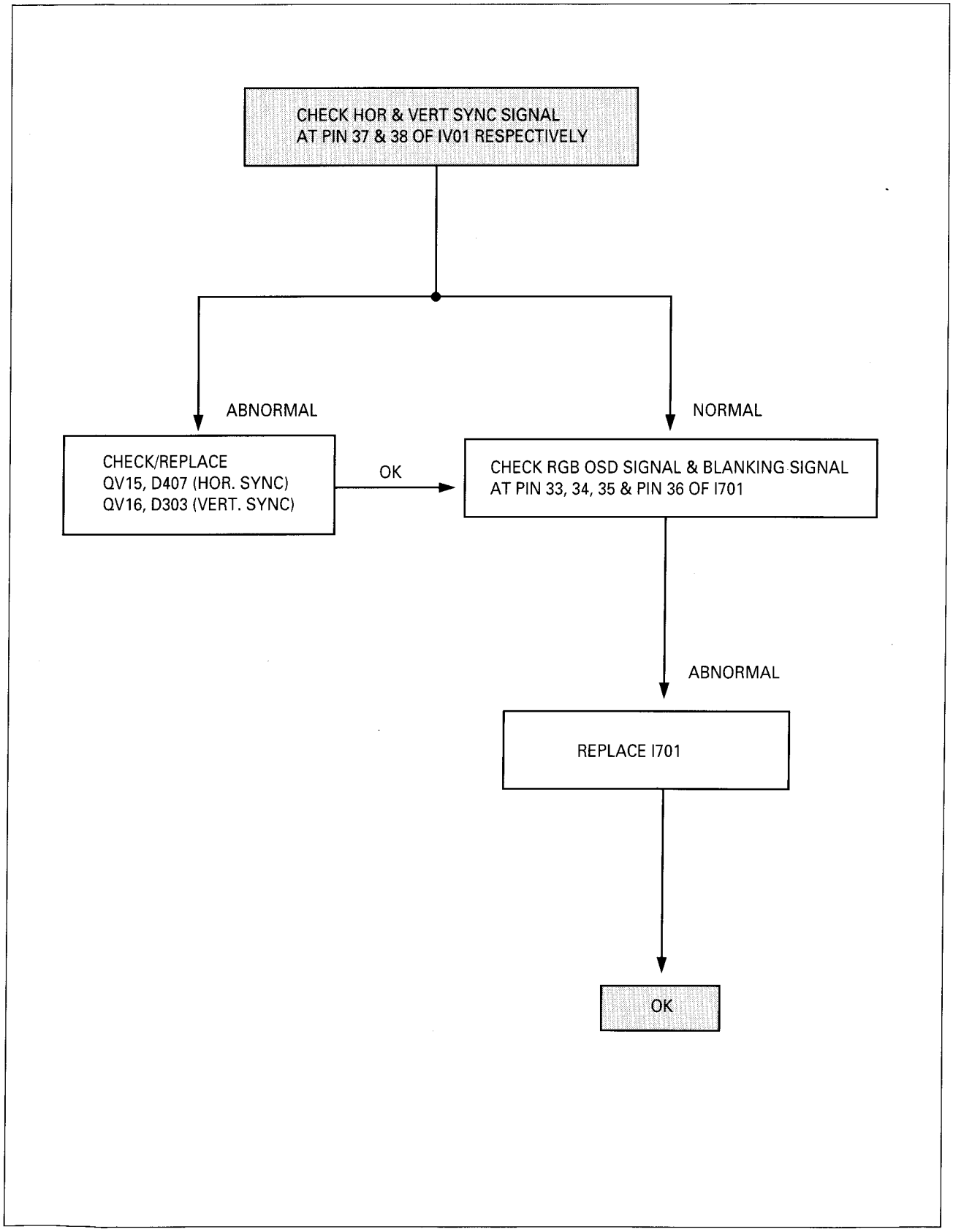
■ NO SOUND (PICTURE OK)



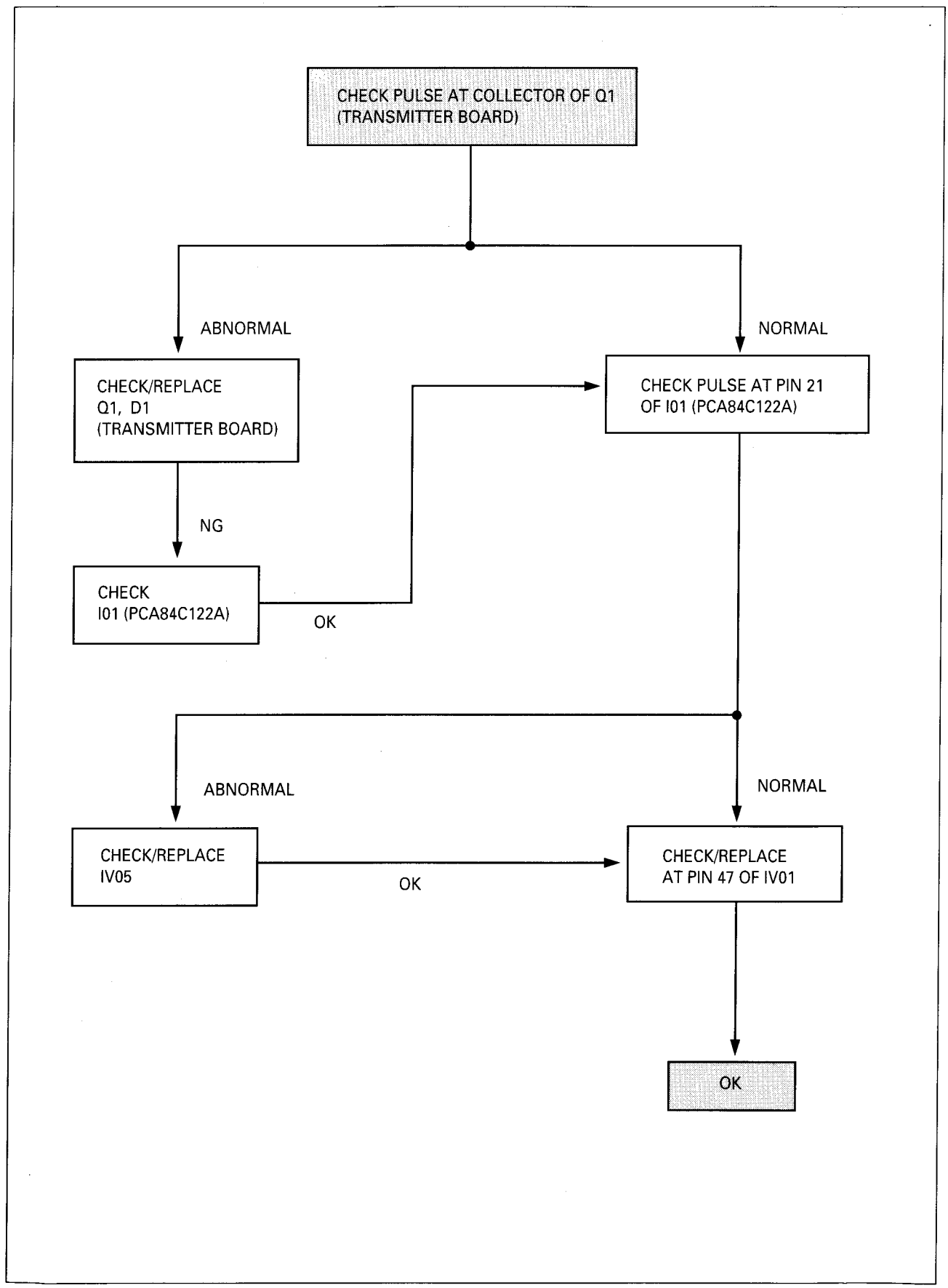
■ NO EXTERNAL AV



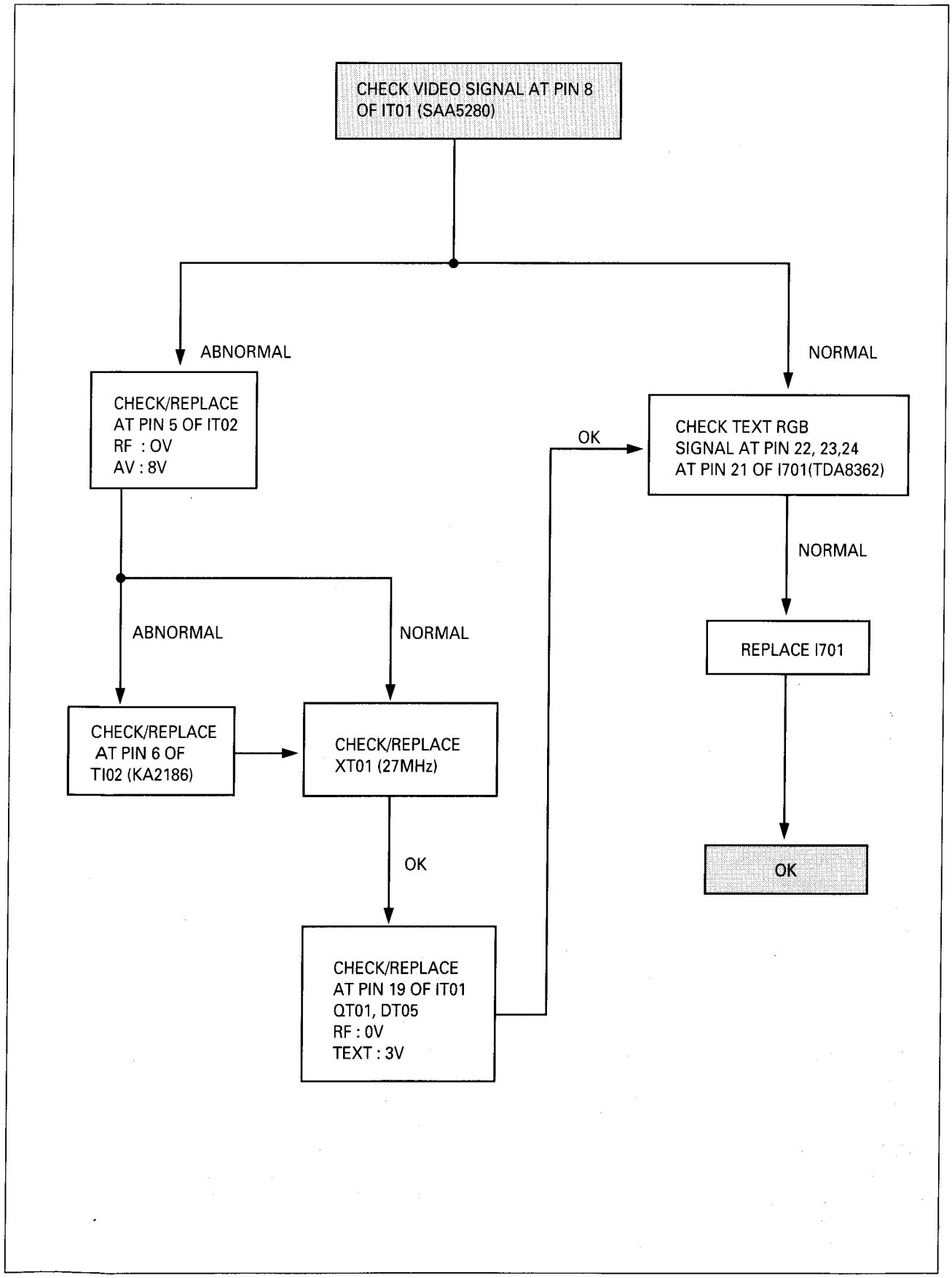
■ NO ON-SCREEN DISPLAY



■ REMOTE CONTROL TROUBLE (LOCAL CONTROL OK)



■ NO TELETEXT


CHECK VIDEO SIGNAL AT PIN 8
OF IT01 (SAA5280)
ABNORMAL
NORMAL
CHECK/REPLACE
AT PIN 5 OF IT02
RF : OV
AV : 8V
OK
CHECK TEXT RGB
SIGNAL AT PIN 22, 23,24
AT PIN 21 OF I701(TDA8362)
NORMAL
REPLACE I701
OK
ABNORMAL
NORMAL
CHECK/REPLACE
AT PIN 6 OF
TI02 (KA2186)
CHECK/REPLACE
XT01 (27MHz)
OK
CHECK/REPLACE
AT PIN 19 OF IT01
QT01, DT05
RF : 0V
TEXT : 3V

■ REPLACEMENT PARTS LIST

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
■ SPEAKER AS				
P601A	4850703S04	CONN AS	YH025-03+YST025+ULW=300	A1, D1
P601A	4850703S05	CONN AS	YH025-03+YST025+ULW=400	
P602A	4850703S06	CONN AS	YH025-03+YST025+ULW=600	
SP01	4858309110	SPEAKER	3W 8 OHM A30C-560	A1, D1
SP01	4858304920	SPEAKER	3W 8 OHM MSF-2D4SB53D	
SP01	4858309710	SPEAKER	CS 1005T6087 E-N (B)	
SP02	4858309710	SPEAKER	CS1005T6087 E-N (B)	
■ PCB LED AS (2066/2166/2072/2172/2075)				
A001	4859820214	PCB LED	T1.6x43x18.5 (131x96.5/3x5)	2066, 2075
A001	4859820414	PCB LED	T1.6x66x34 (198x138/3x3)	2166, 2072, 2172
DV50	DKLR114L--	LED	KLR114L	
DV51	DKLR114L--	LED	KLR114L	
PV01	4850703S20	CONN AS	YM025-03+YST025=400	2066/2166/ 2072/2172
PV01	4850703S21	CONN AS	YM025-03+YST025=600	2075
■ PCB CONTROL AS				
A001	4859821014	PCB CONTROL	T1.6X143X37(163X196.5/5X1)	14B1, A1
A001	4859823614	PCB CONTROL	T1.6X177X29 (197X320/10X1)	D1
A001	4859820314	PCB CONTROL	T1.6X143X37 (163X196.5/5X1)	20B1, 21B1, C1
A001	4859821514	PCB CONTROL	T1.6X153X28(327X87.5X/2X3)	2195
DC01	DKLR114L--	LED	KLR114L	
DC02	DKLR114L--	LED	KLR114L	
DC03	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
DC04	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
DC05	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
DC06	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
DC07	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
DC08	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
DC09	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
IV05	ISR5HP----	IC PREAMP	SR-5HP	D1
IV05	1SR9HP----	IC PREAMP	SR-9HP	
M491	4854921601	BUTTON	ABS BK	14A1
M491	4854920901	BUTTON	ABS BK	14B1
M491	4854922502	BUTTON	ABS BK	D1
M491	4854920702	BUTTON	ABS BK	20A1
M491	4854921001	BUTTON	ABS BK	20B1
M491	4854920701	BUTTON	ABS BK	C1
M491	4854921701	BUTTON	ABS BK	21A1
M491	4854921101	BUTTON	ABS BK	21B1
M491	4854920801	BUTTON	ABS BK	2195
M681	4856812001	TIE CABLE	NYLON66 DA100	
PV01A	4850703S20	CONN AS	YBH025-03+YBIT025+ULW=400	
PV02A	4850705S04	CONN AS	YH025-05+YST025+ULW=400	
PV03A	4850704S04	CONN AS	YH025-04+YST025+ULW=400	
RC01	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
RC02	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
RC03	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
RC04	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
RC05	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
SW01	5SB0101166	SW TACT	KPT-1105A	
SW02	5SB0101166	SW TACT	KPT-1105A	
SW03	5SB0101166	SW TACT	KPT-1105A	
SW04	5SB0101166	SW TACT	KPT-1105A	
SW05	5SB0101166	SW TACT	KPT-1105A	
SW06	5SB0101166	SW TACT	KPT-1105A	D1
SW07	5SB0101166	SW TACT	KPT-1105A	D1

■ TERM ANT AS

00010	4859002150	PLUG PHONE AS	SPC+3C-2WS=150MM	
M361	4853624803	TERMINAL ANT	HIPS BK	
M361A	7128261011	SCREW TAPPING	T2S WAS 2.6X10 MFZN	

■ PCB CRT AS

0002	4859301930	SOCKET CRT	CVT3240-0501	PHLIPS 21", POLKOLOR, SAMSUNG
0002	4859301530	SOCKET CRT	ISM-01	ORION/PHILIPS 14"
0002	4859302030	SOCKET CRT	ISM-03	ORION 20", 21"
A001	4859809213	PCB CRT	T1.6X89X80(269X195/3X2)	PHILIPS 14", ORION
A001	4859809313	PCB CRT	T1.6X89X80(269X195/3X2)	
C501	CXCH1H221J	C CERA	50V CH 220PF J (TAPPING)	
C503	CCXB1H271K	C CERA	50V B 270PF K (TAPPING)	
C511	CXCH1H221J	C CERA	50V CH 220PF J (TAPPING)	
C513	CCXB1H271K	C CERA	50V B 270PF K (TAPPING)	
C521	CXCH1H221J	C CERA	50V CH 220PF J (TAPPING)	
C523	CCXB1H271K	C CERA	50V B 270PF K (TAPPING)	
C541	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
C542	CCYE3D103P	C CERA	2KV E 0.01MF P	
C543	CEYF2E479V	C ELECTRO	250V RSS 4.7MF (10X25)	
M681	4856812001	TIE CABLE	NYLON66 DA100	
P402	4850708042	CONN AS	YBH025-08+YBIT025+ULW=500	
Q501	TKTC3207--	TR	KTC3207	
Q502	TKTA1266Y-	TR	KTA1266Y	
Q511	TKTC3207--	TR	KTC3207	
Q512	TKTA1266Y-	TR	KTA1266Y	
Q521	TKTC3207--	TR	KTC3207	
Q522	TKTA1266Y-	TR	KTA1266Y	
R501	RS02Y123J-	R M-OXIDE FILM	2W 12K OHM J	
R501	RS02Y912J-	R M-OXIDE FILM	2W 9.1K OHM J	14"
R502	RV5221103-	R SEMI FIXED	V10K-5x2.5-6Y-PC-RP	
R503	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J	
R504	RD-AZ241J-	R CARBON FILM	1/6 240 OHM J	
R505	RV5221201-	R SEMI FIXED	EVN D2A A03 200	
R506	RC-2Z332J-	R CARBON FILM	1/2 3.3K OHM J	
R507	RD-AZ560J-	R CARBON FILM	1/6 56 OHM J	
R508	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
R509	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R511	RS02Y123J-	R M-OXIDE FILM	2W 12K OHM J	
R511	RS02Y912J-	R M-OXIDE FILM	2W 9.1K OHM J	14"
R512	RV5221103-	R SEMI FIXED	V10K-5x2.5-6Y-PC-RP	
R513	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J	
R514	RD-AZ241J-	R CARBON FILM	1/6 240 OHM J	
R515	RV5221201-	R SEMI FIXED	EVN D2A A03 200	
R516	RC-2Z332J-	R CARBON COMP	1/2 3.3K OHM J	
R517	RD-AZ560J-	R CARBON FILM	1/6 56 OHM J	
R518	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
R519	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R521	RS02Y123J-	R M-OXIDE FILM	2W 12K OHM J	
R521	RS02Y912J-	R M-OXIDE FILM	2W 9.1K OHM J	14"
R522	RV5221103-	R SEMI FIXED	V10K-5x2.5-6Y-PC-PR	
R523	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J	
R524	RD-AZ241J-	R CARBON FILM	1/6 120 OHM J	
R525	RD-AZ121J-	R CARBON FILM	1/6 120 OHM J	
R525	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	ORION
R526	RC-2Z332J-	R CARBON FILM	1/2 3.3K OHM J	
R527	RD-AZ560J-	R CARBON FILM	1/6 56 OHM J	
R528	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
R541	RD-AZ621J-	R CARBON FILM	1/6 620 OHM J	
R542	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R543	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R544	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R550	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R551	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R552	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	

■ PCB MAIN AS

A001	4859809992	PCB MAIN	T1.6X329X246	
C101	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C102	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
C103	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
C104	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
C105	CEXE1C330A	C ELECTRO	16V RS 33MF (5X11) TP	
C105	CEXE1H100A	C ELECTRO	50V RS 10MF (5X11) TP	
C106	CMXM2A104J	C MYLAR	100V 0.1MF J (TAPPING)	
C107	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C108	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C109	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C110	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C111	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C111	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
C112	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C113	CXCH1H100D	C CERA	50V CH 10PF D (TAPPING)	
C114	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C115	CCXF1H223Z	C CERA	50V F 0.022MF Z (TAPPING)	
C116	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C117	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
C118	CCXF1H223Z	C CERA	50V F 0.022MF Z (TAPPING)	
C119	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
C120	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C121	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C122	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
C123	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
C301	CMXB2A683J	C MYLAR	EU100V 0.068MF J (TAPPING)	
C302	CMXM2A222J	C CERA	100V 2200PF J TP	
C303	CCXB1H102K	C CERA	50V B 100PF K (TAPPING)	
C304	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP	
C305	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
C306	CMXM2A103J	C MYLAR	100V 0.01MF J (TAPPING)	
C307	CCXB1H471K	C CERA	50V B 470PF K (TAPPING)	
C308	CEXF1V101V	C ELECTRO	35V RSS 100MF (8X11.5) TP	
C309	CEXF1V102V	C ELECTRO	35V RSS 1000MF (13X25)	
C310	CMXM2A104J	C MYLAR	100V 0.1MF J (TAPPING)	
C311	CEYF1V102V	C ELECTRO	35V RSS 1000MF (13X25)	
C312	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	
C401	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
C402	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C403	CCXB1H222K	C CERA	50V B 2200PF K (TAPPING)	
C404	CCXB1H222K	C CERA	50V B 2200PF K (TAPPING)	
C405	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C406	CXSL2H100D	C CERA	500V SL 10PF D (TAPPING)	
C407	CCXB2H471K	C CERA	500V B 470PF K (TAPPING)	
C408	CCXB2H222K	C CERA	500V B 2200PF K (TAPPING)	
C409	CMYH3C752J	C MYLAR	1.6KV 7500PF J (BUP)	
C409	CMYH3C602J	C MYLAR	1.6KV 6000PF J (BUP)	
C409	CMYH3C622J	C MYLAR	1.6KV 6200PF J (BUP)	
C409	CMYH3C692J	C MYLAR	1.6KV 6900PF J (BUP)	
C409	CMYH3C822J	C MYLAR	1.6KV 8200PF J (BUP)	
C410	CCYB3D471K	C CERA	2KV B 470PF K	
C411	CMYE2D474J	C MYLAR	PFU 200V 0.47MF J	
C411	CMYE2D334J	C MYLAR	200V 0.33MF J (PL)	
C411	CMYE2D514J	CMYLAR	200V 0.51MF J (PL)	
C412	CEXF2C339V	C ELECTRO	160V RSS 3.3MF (8X11.5) TP	
C412	CEXF2C339V	C ELECTRO	160V RSS 3.3MF (8X16) TP	ORION
C413	CEXF2C330C	C ELECTRO	160V RUS 33MF (13X25)	
C414	CEYE2C220C	C ELECTRO	160V RU 22MF (13X20)	
C415	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)	
C416	CEYF1E471V	C ELECTRO	25V RSS 470MF (10X20)	
C417	CCYB2H472K	C CERA	500V B 4700PF K	
C418	CXSL2H470J	C CERA	500V SL 47PF J (TAPPING)	
C419	CCYB3A102K	C CERA	1KV B 1000PF K	
C420	CMXM2A104J	C MYLAR	100V 0.1MF J (TAPPING)	
C421	CCYB3A102K	C CERA	1KV B 1000PF K	
C422	CEYF2E100C	C ELECTRO	250V RUS 10MF (10X20)	
C423	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
C424	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
C425	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
C426	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
C427	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
C428	CCXB1H181K	C CERA	50V B 180PF K (TAPPING)	
C501	CCXB1H180K	C CERA	50V CH 18PF K (TAPPING)	
C502	CBXF1H104Z	C CERA SMEMI	50V F 0.1MF Z (TAPPING)	
C503	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
C504	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C505	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C506	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C507	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C508	CCXF1H223Z	C CERA	50V F 0.022MF Z (TAPPING)	
C509	CCXF1H223Z	C CERA	50V F 0.022MF Z (TAPPING)	
C510	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C511	CMXM2A104J	C MYLAR	100V 0.1MF J (TAPING)	
C512	CMXM2A224J	C MYLAR	100V 0.22MF J	
C513	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
C514	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
C516	CMXM2A104J	C MYLAR	100V 0.1MF J (TAPPING)	
C517	CMXM2A104J	C MYLAR	100V 0.1MF J (TAPPING)	
C518	CMXM2A104J	C MYLAR	100V 0.1MF J (TAPPING)	
C601	CCXB1H392K	C CERA	50V B 3900PF K (TAPING)	
C603	CEXD1E100F	C ELECTRO	25V RND 10MF (5X11) TP	
C604	CCXB1H102K	C CERA	50V B1000PF K (TAPPING)	
C605	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C606	CXCH1H560J	C CERA	50V CH 56PF J (TAPPING)	
C607	DXCH1H680J	C CERA	50V CH 68PF J (TAPPING)	
C608	CCXB1H222K	C CERA	50V B 2200PF K (TAPPING)	
C609	CEXD1H229F	C ELECTRO	50V RND 2.2MF (5X11) TP	
C610	CCXB1H221K	C CERA	50V B 220PF K (TAPPING)	
C612	CCXB1H102K	C CERA	50V B 220PF K (TAPPING)	
C613	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C614	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C615	CCXB1H181K	C CERA	50V B 180PF K (TAPPING)	
C616	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	
C617	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C619	CCXF1H223Z	C CERA	50V F 0.022MF Z (TAPPING)	
C620	CEXF1C221V	C ELECTRO	16V RSS 220MF (8X11.5) TP	
C621	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
C622	CCXB1H181K	C CERA	50V B 180PF K (TAPPING)	
C623	CCXB1H181K	C CERA	50V B 180PF K (TAPPING)	
C701	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C702	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C703	CCXF1H223Z	C CERA	50V F 0.022MF Z (TAPPING)	
C704	CEXF1C331V	C ELECTRO	16V RSS 330MF (8X11.5) TP	
C705	CCXF1H473Z	C CERA	50V F 0.047MF Z (TAPPING)	
C711	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C716	CMXM2A473J	C MYLAR	100V 0.047MF J (TAPPING)	
C801	CL1JB3104M	C LINE ACROSS	AC250V 0.1MF U/C/SNDF/SV	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
C801	CLIJB3474K	C LINE ACROSS	AC250V 0.47MF U/C/SNDF/SV	
C802	CL1JB3104M	C LINE ACROSS	AC250V 0.1MF U/C/SNDF/SV	
C802	CLIJB3474K	C LINE ACROSS	AC250V 0.47MF U/C/SNDF/SV	
C803	CCXF3A472Z	C CERA	1KV F 4700PF Z	
C804	CCXF3A472Z	C CERA	1KV F 4700PF Z	
C805	CCXF3A472Z	C CERA	1KV F 4700PF Z	
C806	CCXF3A472Z	C CERA	1KV F 4700PF Z	
C807	CEYM2G121T	C ELECTRO	400V LWF 120MF (25X50)	
C808	CMXM2A682J	C MYLAR	100V 6800PF J (TAPPING)	
C809	CMYH3C152J	C MYLAR	1.6KV 1500PF J (BUP)	
C811	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
C812	CEYE1C102V	C ELECTRO	16V RSS 100MF (10X20)	
C813	CCXB1H101K	C CERA	50V B 100PF K (TAPPING)	
C814	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C815	CMXM2D682K	C MYLAR	200V 6800PF K	
C816	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
C817	CEXF1E331V	C ELECTRO	25V RSS 330MF (10X20) TP	
C819	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C820	CH1FFF103M	C CERA AC	AC400V 10000PF F DE7150	
C821	CH1FFF103M	C CERA AC	AC400V 10000PF F DE7150	
C822	CEYF2C101C	C ELECTRO	160V RUS 100MF (16X25)	
C823	CEYF2C101C	C ELECTRO	160V RUS 100MF (16X25)C426	
C827	CCXB2H102K	C CERA	500V B 1000PF K (TAPPING)	
C828	CEXF1E102C	C ELECTRO	25V RUS 1000MF (13X25)	
C830	CCYR3A102K	C CERA	HIKR 1KV 1000PF K 125C	
C831	CEXF1V471C	C ELECTRO	35V RUS 470MF (13X25)	
C832	CCXB3A152K	C CERA	HIKR 1KV 1500PF K 125C	
CA01	CEXE1H100A	C ELECTRO	50V RS 10MF (5X11) TP	
CL01	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
CL02	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
CL03	CEXE1C330A	C ELECTRO	16V RS 33MF (5X11) TP	
CL04	CEXE1H479A	C ELECTRO	50V RS 4.7MF (5X11) TP	
CL05	CEXE1H479A	C ELECTRO	50V RS 4.7MF (5X11) TP	
CL06	CEXE1H109A	C ELECTRO	50V RS 1MF (5X11) TP	
CL07	CCXB1H222K	C CERA	50V B 2200PF K (TAPPING)	
CL08	CXCH1H100D	C CERA	50V CH 10PF D (TAPPING)	
CL09	4850L00200	TRIMMER	TZ03R 300B (30PF)	
CL12	CEXD1E100F	C ELECTRO	25V RND 10MF (5X11) TP	
CN01	CXCH1H221J	C CERA	50V CH 220PF J (TAPPING)	
CN02	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
CT01	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
CT02	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
CT03	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
CT04	CXCH1H150J	C CERA	50V CH 15PF J (TAPPING)	
CT05	CXCH1H560J	C CERA	50V CH 56PF J (TAPPING)	
CT06	CMXM2A104J	C MYLAR	100V 0.1MF J (TAPPING)	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
CT07	CMXM2A104J	C MYLAR	100V 0.1MF J (TAPPING)	
CT08	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CT09	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CT11	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
CT12	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
CT14	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
CT15	CCXB1H101K	C CERA	50V B 100PF K (TAPPING)	
CT16	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
CT17	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CV01	CTXD1V228K	C TANTAL	35V 0.22MF K (TAPPING)	
CV02	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP	
CV03	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
CV04	CMXM2A104J	C MYLAR	100V 0.1MF J (TAPPING)	
CV05	CMXM2A104J	C MYLAR	100V 0.1MF J (TAPPING)	
CV06	CCXB1H181K	C CERA	50V B 180PF K (TAPPING)	
CV07	CEXF1H220V	C ELECTRO	50V RSS 22MF (5X11) TP	
CV08	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
CV09	CEXF1H220V	C ELECTRO	50V RSS 22MF (5X11) TP	
CV10	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
CV11	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
CV12	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
CV13	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CV14	CXCH1H270J	C CERA	50V CH 27PF J (TAPPING)	
CV15	CXCH1H150J	C CERA	50V CH 15PF J (TAPPING)	
CV16	CEXE1C330A	C ELECTRO	16V RS 33MF (5X11) TP	
CV17	CEXE1C330A	C CERA	50V B 560PF K (TAPPING)	
CV18	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CV19	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
CV21	CCXB1H222K	C CERA	50V B 2200PF K (TAPPING)	
CV22	CXCH1H220J	C CERA	50V CH 22PF K (TAPPING)	
CV23	CXCH1H220J	C CERA	50V CH 22PF J (TAPPING)	
CV24	CCXB1H331K	C CERA	50V B 330PF K (TAPPING)	
CV27	CEXE1H100A	C ELECTRO	50V RS 10MF (5X11) TP	
CV28	CEXF1H220V	C ELECTRO	50V RSS 22MF (5X11) TP	
CV30	CCXB1H151K	C CERA	50V B 150PF K (TAPPING)	
CV31	CCZB1H151K	C CERA	50V B 150PF K (AXIAL)	
CV32	CCZB1H151K	C CERA	50V B 150PF K (AXIAL)	
CV33	CEXF1H229V	C ELECTRO	50V RSS 2.2MF 5X11	
D302	DBYV95C---	DIODE	BYV95C	
D401	DZPD8R2---	DIODE ZENER	ZPD8.2	
D402	DBYW95C---	DIODE	BYW95C	
D403	DBYV95C---	DIODE	BYV95C	
D404	DBYV95C---	DIODE	BYV95C	
D405	DBYV95C---	DIODE	BYV95C	
D406	DBYV95C---	DIODE	BYV95C	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
D407	DUZ5RIBM--	DIODE ZENER	UZ-5.1BM	
D408	DIN4148---	DIODE	1N4148	
D409	DIN4148---	DIODE	1N4148	
D501	DIN4148---	DIODE	1N4148	
D503	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
D504	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
D505	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
D506	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
D507	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
D603	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
D701	DIN4148---	DIODE	1N4148	
D702	DIN4148---	DIODE	1N4148	
D703	DIN4148---	DIODE	1N4148	
D704	DUZ6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
D705	DZP6R2BM--	DIODE ZENER	UZ-6.2BM 6.2V	
D706	DZPD5R6---	DIODE ZENER	ZPD5.6	
D707	DIN4148---	DIODE	1N4148	
D801	DPBS408GU-	DIODE	PBS 408GU-CA	
D803	DIN4002---	DIODE	1N4002	
D804	DBYV95C---	DIODE	BYV95C	
D805	DBYV95C---	DIODE	BYV95C	
D807	DBYV95C---	DIODE	BYV95C	
D809	DBYW95C---	DIODE	BYW95C	
D810	DBYV95C---	DIODE	BYV95C	
D811	DBYV95C---	DIODE	BYV95C	
D812	DIN4148---	DIODE	1N4148	
DA01	DIN4148---	DIODE	1N4148	
DL01	DIS2186---	DIODE	IS2186	
DL02	DIS2186----	DIODE	IS2186	
DL03	DIN4148---	DIODE	1N4148	
DL04	DIS2186---	DIODE	IS2186	
DL05	DIN4148---	DIODE	1N4148	
DL06	DIN4148---	DIODE	1N4148	
DL07	DIN4148---	DIODE	1N4148	
DL08	DIN4148---	DIODE	1N4148	
DT01	DIN4148---	DIODE	1N4148	
DT02	DIN4148---	DIODE	1N4148	
DT03	DIN4148---	DIODE	1N4148	
DT05	DIN4148---	DIODE	1N4148	W/O TXT
DT06	DIN4148---	DIODE	1N4148	
DV02	DIN4148---	DIODE	1N4148	
DV06	DIN4148---	DIODE	1N4148	
DV08	DIN4148---	DIODE	1N4148	
DV09	DIN4148---	DIODE	1N4148	W/O TXT
DV12	DIN4148---	DIODE	1N4148	
DV13	DIN4148---	DIODE	1N4148	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
DV14	DIN4148---	DIODE	1N4148	
DV15	DIN4148---	DIODE	1N4148	
DV17	DIN4148---	DIODE	1N4148	
DV18	DUZ5R6BM--	DIODE ZENER	UZ-5.6BM (TAPPING)	
F801	5FSCB4022R	FUSE CERA	SEMKO F4AH 4A 250V MF51	
F801A	4857415001	CLIP FUSE	PFC5000-0702	
F801B	4857415001	CLIP FUSE	PFC5000-0702	
F801C	4857621200	INSU COVER	PVC T1.0 94V-O	TU
I301	1TDA3653B-	IC	TDA3653B	
I301A	4857024605	HEAT SINK	AL EX	
I301B	4856012310	SCREW SPECIAL	PAN 3X10 MFZN	
I301C	7392300011	NUT HEX	6N-2-3 MFZN	
I301D	4856215200	WASHER	SPCC	
I401	1KA7808---	IC REGULATOR	KA7808	
I402	1L7812CV--	IC REGULATOR	L7812CV	
I402A	4857024900	HEAT SINK	AL EX	
I402B	7121301011	SCREW TAPPING	T2S PAN 3X10 MFZN	
I501	1TDA4661--	IC	TDA4661	
I502	1TDA8395--	IC	TDA8395	
I601	ITDA7056--	IC	TDA7056	
I601A	4857024613	HEAT SINK	AL EX	
I601B	4856012310	SCREW SPECIAL	PAN 3X10 MFZN	
I601C	7392300011	NUT HEX	6N-2-3 MFZN	
I601D	4856215200	WASHER	SPCC	
I701	1TDA8362--	IC	TDA8362	
I701	1TDA8362B-	IC	TDA8362B	
I801	5TDA4601--	IC	TDA4601	
I801A	4857025401	HEAT SINK	A1050P-H24 T2.0	
I801B	4856012310	SCREW SPECIAL	PAN 3X10 MFZN	
I801C	7392300011	NUT HEX	6N-2-3 MFZN	
I801D	4856215200	WASHER	SPCC	
I802	1L7805CV--	IC REGULATOR	L7805CV	
I802A	4857026900	HEAT SINK	AL EX	
I802B	7121300811	SCREW TAPPING	T2S PAN 3X8 MFZN	
IA01	1TC4053BP	IC	TC4053BP	
IL01	1TDA3843--	IC	TDA3843	
IV01	1DW167MN**	IC MICOM	DW-167MN**	**: 01 or 02 or 03 or 04
IV02	124LC08B--	IC	24LCO8B	
IV03	1K1A7042P-	IC SWITCH	KIA7042P	
IV04	1UPC574J--	IC	UPC574J	
IV05	1RØ1Ø1DBK-	IC PREAMP	RØ1-Ø1D (BK)	2066,2166 2072,2172, 2075
ITO1	ISAA5281PE	IC TEXT	SAA5281 P/E	
ITO1	ISAA5281PH	IC TEXT	SAA5281 P/H	
ITO1	ISAA5281PR	IC TEXT	SAA5281 P/R	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
IT02	1KA2186---	IC	KA2186	
JS01	4859200401	SOKET RGB	SR-S1A1 (ANGLE TYPE)	
JW001	WP-1BL500Y	WIRE LEAD 1007	#22 1/0.65 BL 5F-50-5F	
JW002	WP-1BL500Y	WIRE LEAD 1007	#22 1/0.65 BL 5F-50-5F	
L101	58C9780027	COIL CHOKE	TRF-1201B (0.97 UH)	
L102	5CPZ470K02	COIL PEAKING	47UH 3.5MM K (LAL025B)	
L103	58B38R9061	COIL PIF	TRF-1444P	
L104	58C101J091	COIL CHOKE	AL04-100J (10MH)	
L105	5CPZ470K02	COIL PEAKING	47UH 3.5MM K (LAL02TB)	
L301	58C100J091	COIL CHOKE	AL04-100J (10MH)	
L302	58C101J091	COIL CHOKE	AL04-100J (10MH)	
L401	5CPZ109M02	COIL PEAKING	1UH 3L5MM M (LAL02TB)	
L402	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
L403	58H0000034	COIL H-LINEARITY	L-62	
L403	58H0000018	COIL H-LINEARITY	L-125 (125UH)	
L403	58H0000016	COIL H-LINEARITY	L-102 (102UH)	
L403	58H0000020	COIL H-LINEARITY	L-76 (76.5UH)	
L404	58C9430599	COIL CHOKE	AZ-9004Y(94MH)	
L405	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
L405	58C9430599	COIL CHOKE	AZ-9004Y (94MH)	
L406	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
L601	5CPZ829K02	COIL PEAKING	8.2UH 3.5MM K (LAL02TB)	
L602	58C100J091	COIL CHOKE	AL04-100J (10MH)	
L603	58C100J091	COIL CHOKE	AL04-100J (10MH)	
L604	58C9430599	COIL CHOKE	AZ-9004Y(94MH)	
L604	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
L605	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
L606	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
L701	5CPZ569K02	COIL PEAKING	5.6UH 3.5MM K (LAL02TB)	
L702	58C100J091	COIL CHOKE	AL04-100J (10MH)	
L801	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
L802	585801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
L803	5CPZ109M02	COIL PEAKING	1UH 3.5MM M (LAL02TB)	
L807	58C9430599	COIL CHOKE	AZ-9004Y(94MH)	
LA02	4859704500	LABEL CRT BS	STICKER	
LL01	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
LL02	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
LN01	5CPZ101K02	COIL PEAKING	100UH 3.5MM K (LAL02TB)	
LT01	5CPZ109K02	COIL PEAKING	1UH 3.5MM M (LAT02TB)	
LV01	5CPZ390K02	COIL PEAKING	39UH 3.5MM M (LAT02TB)	
LV02	5CPZ479K02	COIL PEAKING	4.7UH 3.5MM M (LAT02TB)	
LV03	5CPZ479K02	COIL PEAKING	4.7UH 3.5MM M (LAT02TB)	
LV04	5CPZ479K02	COIL PEAKING	4.7UH 3.5MM M (LAT02TB)	
M511	4857235800	SHIELD CASE	SPTH-C T0.25	TF
M681	4856812001	TIE CABLE	NYLON66 DA100	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
M512A	4857235900	SHIELD PLATE	SPTH-C T0.25	TF
P401	4859240120	CONN WAFER	YFW500-06	
P401	4859240020	CONN WAFER	YFW500-05	ORION 14", 20"
P402	4859231620	CONN WAFER	YW025-03	
P001	4851900120	SPEAKER GROUND AS	DS-W1007-RC5R6M	
P501	4859231820	CONN WAFER	YW025-05	
P002	4851900120	SPEAKER GROUND AS	DS-W1007-RC5R6M	
P601	4859231620	CONN WAFER	YW025-03	
P602	4859231620	CONN WAFER	YW025-03	
P701A	4859231620	CONN WAFER	YW025-03	
P701B	4850703N02	CONN AS	YH025-03+YST25+USW=300	
P801A	4859902910	CORD POWER AS	KKP419C+BL102NG+TUBE=2100	TK, VA
P801A	4859903110	CORD POWER AS	701-01+BL102NG+TUBE=2250	TF
P801A	4859904110	CORD POWER AS	CW32011 250V 5A+HOUS=250	TU
A000	4859901111	CORD POWER	KKP-419C KLCE-2F (2.1ME)	
P802	4859242220	CONN WAFER	YEW800-02	
P803	4859231620	CONN WAFER	YW025-03	
P805	4851900130	TUNER GROUND AS	DS-W1015-S	TF
PA01A	4859231720	CONN WAFER	YW025-04	
PA01B	4850704016	CONN AS	YH025-04+YST025+ULW=200	
PV01	4859231620	CONN WAFER	YW025-03	
PV02	4859231820	CONN WAFER	YW025-05	
PV03	4859231720	CONN WAFER	YW025-04	
PV04A	4859231620	CONN WAFER	YW025-03	
PV04B	4850703S26	CONN AS	YH025-03+YST025+USW=200	
Q101	TKTC3197--	TR	KTC3197	
Q401	TKTC3207--	TR	KTC3207	
Q402	T2SD1555-	TR	2SD1555	
Q402A	4857024500	HEAT SINK	AL EX	
Q402B	4856012310	SCREW SPECIAL	PAN 3X10 MFZN	
Q402C	7392300011	NUT HEX	6N-2-3 MFZN	
Q402D	4856215200	WASHER	SPCC	
Q501	TKTC3198Y-	TR	KTC3198Y	
Q502	TKTC3198Y-	TR	KTC3198Y	
Q503	TKTC3198Y-	TR	KTC3198Y	
Q601	TKTC3198Y-	TR	KTC3198Y	
Q602	TKTC3198Y-	TR	KTC3198Y	
Q603	TKTC3197--	TR	KTC3197	
Q701	TKTC3198Y-	TR	KTC3198Y	
Q702	TKTC3198Y-	TR	KTC3198Y	
Q801	T2SD1555--	TR	2SD1555	
Q801A	4857024400	HEAT SINK	AL EX	
Q801B	7271301011	SCREW TAPTITE	TT3 PAN 3X10 MFZN	
Q801L	4855801719	LABEL WARNING	STICKER 50X10	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
Q805	TKTC3198Y-	TR	KTC3198Y	
Q806	TKTC3198Y-	TR	KTC3198Y	
QA01	TKTC3198Y-	TR	KTC3198Y	
QA02	TKTA1266Y-	TR	KTA1266Y	
QA03	TKTC3198Y-	TR	KTC3198Y	
QL01	TKTC3198Y-	TR	KTC3198Y	
QL02	TKTC3198Y-	TR	KTC3198Y	
QL03	TKTC3198Y-	TR	KTC3198Y	
QL04	TKTC3198Y-	TR	KTC3198Y	
QL05	TKTC3198Y-	TR	KTC3198Y	
QL06	TKTA1266Y-	TR	KTA1266Y	
QN01	TKTC3198Y-	TR	KTC3198Y	
QT01	TKTC3198Y-	TR	KTC3198Y	
QT05	TKTA1266Y-	TR	KTC3198Y	
QT07	TKTA1266Y-	TR	KTA1266Y	
QT08	TKTC3198Y-	TR	KTC3198Y	
QV01	TKTC3202Y-	TR	KTC3202Y	
QV02	TKTC3202Y-	TR	KTC3202Y	
QV03	TKTA1266Y-	TR	KTA1266Y	
QV04	TKTA1266Y-	TR	KTA1266Y	
QV05	TKTA1266Y-	TR	KTA1266Y	
QV05	TKTC3198Y-	TR	KTC3198Y	
QV07	TKTC3198Y-	TR	KTC3198Y	
QV08	TKTC3198Y-	TR	KTC3198Y	
QV09	TKTC3198Y-	TR	KTC3198Y	
QV11	TKTC3198Y-	TR	KTC3198Y	
QV13	TKTA1266Y-	TR	KTA1266Y	
QV14	TKTC3198Y-	TR	KTC3198Y	
QV15	TKTC3198Y-	TR	KTC3198Y	
QV16	TKTC3198Y-	TR	KTC3198Y	
QV17	TKTA1266Y-	TR	KTA1266Y	
QV18	TKTC3198Y-	TR	KTC3198Y	
R101	RD-AZ470J-	R CARBON FILM	1/6 47 OHM J	
R102	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R103	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
R104	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
R105	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R106	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R107	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
R108	RD-AZ183J-	R CARBON FILM	1/6 18K OHM J	
R108	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
R109	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
R110	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R111	RD-AZ304J-	R CARBON FILM	1/6 300K OHM J	
R112	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
R113	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
R113	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R114	RD-4Z365J-	R CARBON FILM	1/4 36M OHM J	
R116	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R301	RD-AZ335J-	R CARBON FILM	1/4 3.3M OHM J	
R302	RD-AZ244J-	R CARBON FILM	1/6 240K OHM J	
R304	RD-AZ183J-	R CARBON FILM	1/6 18K OHM J	
R305	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J	
R306	RD-4Z471J-	R CARBON FILM	1/4 470 OHM J	
R307	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R308	RS02Y121J-	R M-OXIDE FILM	2W 120 OHM J	
R308	RS02Y181J-	R M-OXIDE FILM	2W 180 OHM J	
R308	RS02Y271J-	R M-OXIDE FILM	2W 270 OHM J	
R309	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R310	RD-AZ913J-	R CARBON FILM	1/6 91K OHM J	
R311	RD-AZ391J-	R CARBON FILM	1/6 390 OHM J	
R312	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
R313	RD-2Z229J-	R CARBON FILM	1/2 2.2 OHM J	
R314	RD-AZ514J-	R CARBON FILM	1/6 510K OHM J	
R315	RD-AZ202J-	R CARBON FILM	1/4 2K OHM J	
R316	RD-4Z271J-	R CARBON FILM	1/4 270 OHM J	
R317	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R401	RS02Y153J-	R M-OXIDE FILM	2W 15K OHM J	
R402	RS02Y153J-	R M-OXIDE FILM	2W 15K OHM J	
R403	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R404	RD-AZ151J-	R CARBON FILM	1/6 150 OHM J	
R405	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
R406	RD-AZ824J-	R CARBON FILM	1/6 820K OHM J	
R407	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R408	RD-4Z272J-	R CARBON FILM	1/4 2.7K OHM J	
R409	RS02Y512J-	R M-OXIDE FILM	2W 5.1K OHM J	
R410	RS02Y512J-	R M-OXIDE FILM	2W 5.1K OHM J	
R411	RD 2Z164J-	R CARBON FILM	1/2 160K OHM J	
R411	RD-2Z114J-	R CARBON FILM	1/2 110K OHM J	
R412	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R413	RS01Y103J-	R M-OXIDE FILM	1W 10K OHM J	
R414	RS02Y561J-	R M-OXIDE FILM	2W 560 OHM J	
R415	RF01Y109J-	R FUSIBLE	1W 1 OHM J	
R416	RD-2Z273J-	R CARBON FILM	1/2 27K OHM J	
R417	RD-AZ124J-	R CARBON FILM	1/6 120K OHM J	
R418	RD-AZ303J-	R CARBON FILM	1/6 30K OHM J	
R419	RD-AZ303J-	R CARBON FILM	1/6 30K OHM J	
R420	RF01Y100J-	R FUSIBLE	1W 10 OHM J	
R421	RF01Y689JA	R FUSIBLE	1W 6.8 OHM J A CURVE	PHILIPS 21"
R421	RF01Y569JA	R FUSIBLE	1W 5.6 OHM J A CURVE	ORION 14"

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
R421	RF01Y399JA	R FUSIBLE	1W 3.9 OHM J A CURVE	PHILIPS 14"
R421	RF01Y688J-	R FUSIBLE	1W 0.68 OHM J	POLKOLOR 14"
R421	RF02Y279JA	R FUSIBLE	2W 2.7 OHM J A CURVE	SAMSUNG 20"
R421	RF02Y249JA	R FUSIBLE	2W 2.4 OHM J A CURVE	POLKOLOR 20"
L421	RF01Y629JA	R FUSIBLE	1W 6.2 OHM J A CURVE	ORION 20",21"
R422	RF02Y339J-	R RUSIBLE	2W 3.3 OHM J	
R423	858010650Y	WIRE COPPER	AWG22 1/0.65 TIN COATING	
R423	RS02Y560J-	R M-OXIDE FILM	2W 56 OHM J	
R501	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
R502	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R503	RD-AZ121J-	R CARBON FILM	1/6 120 OHM J	
R504	RD-4Z109J-	R CARBON FILM	1/4 1 OHM J	
R505	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R506	RD-AZ103J-	R CARBON FILM	1/4 10K OHM J	
R507	RD-4Z511J-	R CARBON FILM	1/4 510 OHM J	
R508	RD-AZ103J-	R CARBON FILM	1/6 75 OHM J	
R509	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R510	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R511	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R512	RD-4Z750J-	R CARBON FILM	1/4 75 OHM J	
R513	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R514	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	
R515	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	
R516	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	
R517	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R610	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R602	RD-AZ751J-	R CARBON FILM	1/6 750 OHM J	
R603	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R604	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R605	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
R610	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J	
R611	RD-AZ270J-	R CARBON FILM	1/6 27 OHM J	
R612	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
R613	RD-AZ681J-	R CARBON FILM	1/6 680 OHM J	
R614	RD-AZ391J-	R CARBON FILM	1/6 390 OHM J	
R620	RD-AZ752J-	R CARBON FILM	1/6 7.5K OHM J	TWO SPEAKER
R620	RD-AZ133J-	R CARBON FILM	1/6 13K OHM J	ONE SPEAKER
R621	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J	
R624	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R625	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R626	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R701	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R702	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J	
R703	RD-AZ470J-	R CARBON FILM	1/6 47 OHM J	
R704	RD-AZ101J-	R CARBON FILM	1/6 100K OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
R705	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R707	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R708	RD-AZ121J-	R CARBON FILM	1/6 120 OHM J	
R709	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R710	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R711	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R712	RD-AZ109J-	R CARBON FILM	1/6 1 OHM J	
R713	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J	
R715	RD-AZ362J-	R CARBON FILM	1/6 3.6K OHM J	
R720	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R721	RD-AZ184J-	R CARBON FILM	1/6 180K OHM J	
R801	DJ140M290L	POSISTOR	J503P53D140M290L	21"
R801	DEC180M270	POSISTOR	ECPAC180M270	14", 20"
R802	RD-2Z154J-	R CARBON FILM	1/2 150K OHM J	
R803	RD-2Z124J-	R CARBON FILM	1/2 120K OHM J	
R804	RF01Y688J-	R FUSIBLE	1W 0.68 OHM J	
R805	RD-AZ270J-	R CARBON FILM	1/2 27 OHM J	
R806	RX05B360JE	R CEMENT	5W 36 OHM J BENCH 12.5MM	
R807	DB59346P20	POSISTOR	B59346-A1502-P20	
R808	RS02Y912J-	R M-OXIDE FILM	2W 9.1K OHM J	
R810	RS02Y912J-	R M-OXIDE FILM	2W 9.1K OHM J	
R809	RD-4Z122J-	R CARBON FILM	1/4 1.2K OHM J	
R811	RD-4Z153J-	R CARBON FILM	1/4 1.5K OHM J	
R812	RD-4Z153J-	R CARBON FILM	1/4 15K OHM J	
R813	RS02Y101J-	R M-OXIDE FILM	2W 100 OHM J	
R814	RD-4Z272J-	R CARBON FILM	1/4 2.7K OHM J	
R823	RF01Y109J-	R FUSIBLE	1W 1 OHM J	
R824	RS01Y270J-	R M-OXIDE FILM	1W 27 OHM J	
R825	RS02Y159J-	R FUSIBLE	2W 1.5 OHM J	
R827	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R828	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
R829	RS01Y473J-	R CARBON FILM	1W 47K OHM J	
R830	RD-4Z221J-	R CARBON FILM	1/4 220 OHM J	
R831	RX10B339JK	R CEMENT	10W 3.3 OHM J BENCH 25MM	
R832	RD-2Z154J-	R CARBON FILM	1/2 150K OHM J	
R833	RD-2Z124J-	R CARBON FILM	1/2 120K OHM J	
RA01	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
RA02	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RA03	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RA04	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
RA05	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RA06	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
RA07	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
RA08	RD-4Z109J-	R CARBON FILM	1/4 1 OHM J	
RA09	RD-AZ824J-	R CARBON FILM	1/6 820K OHM J	
RL01	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
RL02	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RL03	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RL04	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RL05	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
RL06	RD-AZ683J-	R CARBON FILM	1/6 68K OHM J	
RL07	RD-AZ302J-	R CARBON FILM	1/6 3K OHM J	
RL08	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
RL09	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
RL10	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RL11	RD-AZ393J-	R CARBON FILM	1/6 39K OHM J	
RL12	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
RL13	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RL14	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
RL15	RD-AZ393J-	R CARBON FILM	1/6 39K OHM J	
RL17	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RL24	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
RL25	RD-AZ433J-	R CARBON FILM	1/6 43K OHM J	
RN01	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RN02	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
RT01	RD-AZ273J-	R CARBON FILM	1/6 27K OHM J	
RT02	RD-AZ431J-	R CARBON FILM	1/6 430 OHM J	
RT03	RD-AZ431J-	R CARBON FILM	1/6 430 OHM J	
RT04	RD-AZ431J-	R CARBON FILM	1/6 430 OHM J	
RT05	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RT07	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
RT08	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
RT09	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RT10	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
RT11	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
RT15	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RT16	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
RT17	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J	
RT18	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RT19	RD-AZ182J-	R CARBON FILM	1/6 1.8K OHM J	
RT20	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RT23	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
RT24	RD-4Z109J-	R CARBON FILM	1/4 1K OHM J	
RT25	RD-4Z113J-	R CARBON FILM	1/4 11K OHM J	
RT30	RD-AZ621J-	R CARBON FILM	1/6 620 OHM J	
RT31	RD-AZ751J-	R CARBON FILM	1/6 750 OHM J	
RT33	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RV01	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
RV02	RD-AZ912J-	R CARBON FILM	1/6 9.1K OHM J	
RV03	RD-4Z333J-	R CARBON FILM	1/4 33K OHM J	
RV04	RS02Y562J-	R M-OXIDE FILM	2W 5.6K OHM J	
RV05	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
RV06	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
RV07	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
RV08	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RV09	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J	
RV09	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
RV10	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
RV11	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
RV12	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RV13	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
RV14	RD-AZ623J-	R CARBON FILM	1/6 62K OHM J	
RV15	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RV16	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RV17	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RV17	RD-AZ113J-	R CARBON FILM	1/6 11K OHM J	
RV18	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
RV19	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RV20	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RV21	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
RV22	RD-AZ273J-	R CARBON FILM	1/6 27K OHM J	
RV23	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
RV24	RD-AZ151J-	R CARBON FILM	1/6 150 OHM J	
RV25	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
RV26	RD-AZ203J-	R CARBON FILM	1/6 20K OHM J	
RV27	RD-AZ123J-	R CARBON FILM	1/6 12K OHM J	
RV28	RD-AZ203J-	R CARBON FILM	1/6 20K OHM J	
RV29	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RV30	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RV31	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RV32	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
RV33	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RV34	RD-AZ391J-	R CARBON FILM	1/6 390 OHM J	
RV35	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
RV36	RD-AZ470J-	R CARBON FILM	1/6 47 OHM J	
RV37	RD-AZ391J-	R CARBON FILM	1/6 390 OHM J	
RV38	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J	
RV39	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
RV40	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
RV41	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RV42	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
RV43	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
RV45	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RV46	RD-AZ101J-	R CARBON FILM	1/6 100K OHM J	
RV47	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
RV48	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
RV49	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RV50	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
RV51	RD-AZ114J-	R CARBON FILM	1/6 110K OHM J	
RV52	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J	
RV53	RD-AZ622J-	R CARBON FILM	1/6 6.2K OHM J	
RV54	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
RV55	RD-AZ823J-	R CARBON FILM	1/6 82K OHM J	
RV56	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
RV57	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	
RV58	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
RV59	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RV60	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RV61	RD-89X103J	R ARRAY	9P(8) 1/8W 10K OHM J	
RV62	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RV63	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RV64	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
RV65	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RV66	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RV67	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RV68	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RV70	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
S801	5SC0101328	SW RELAY	SDT-SS-112DM	
SF101	5PK2955M--	FILTER SAW	K2955M	TK, VA
SF101	5PG1966M--	FILTER SAW	G1966M	TF
SF101	5PJ1953M--	FILTER SAW	J1953M	TU
SL01	5PL9461M--	FILTER SAW	L9461M	VA
SW801	5S40102073	SW PUSH	ME-7 1C 2P	
T401	50D0000022	TRANS DRIVE	HD-15D	
T402	50H0000119	FBT	DCF-2077D	ORION 14"
T402	50H0000134	FBT	FSA24008S	PHILIPS 14"
T402	50H0000155	FBT	HST1142,5025B	POLKOLOR 14"
T402	50H0000120	FBT	DCF-2217J	ORION 20"
T402	50H0000142	FBT	FSA26012M	POLKOLOR 20"
T402	50H0000121	FBT	DCF-2217L	ORION 21"
T402	50H0000124	FBT	FSA17013M	PHILIPS 21", SAMSUNG
T801	50M0000084	TRANS SMPS	TSM-4020	
VR101	RV5426103P-	R SEMI FIXED	RH0638C 10K OHM	
VR301	RV5426221P	R SEMI FIXED	EVN-DJA-A03 220 OHM B	
VR302	RV5426103P	R SEMI FIXED	RH0638C 10K OHM B	
VR401	RV5426103P	R SEMI FIXED	RH0638C 10K OHM B	
VR701	RV5426503E	R SEMI FIXED	RH0638C-50K OHM	
VR801	RV5426502P	R SEMI FIXED	RH0638C-5K OHM	
VT101	4859709230	TUNER VARACTOR	VTSS7SZ3	
VT101	4859709830	TUNER VARACTOR	TEKE4-073A	TF, TK
VT101	4859713030	TUNER VARACTOR	TECC2889VA15C	TF,TK(LOCAL PART)
VT101	4859709330	TUNER VARACTOR	DET7BZ	TU
VT101	4859711330	TUNER VARACTOR	2900KKC	
X501	5XE4R4336E	CRYSTAL QUARTZ	HC-49/U 4.433619MHZ 30PPM	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
XN01	5XE3R5795E	CRYSTAL QUARTZ	HC-491U 3.5795MHZ 30PPM	
XV01	5XE6R0000C	CRYSTAL QUARTZ	HC-49/U 6.0000 MHZ 20PPM	
XT01	5XE27R000E	CRYSTAL QUARTZ	HC-491U 27.0MHZ 30PPM	
SW01	5S50101008	SW TACT	KPT-1105V 1C-1P	2066/2166 2072/2172 2075
SW02	5S50202002	SW TACT	JTM-1108B 2C-2P	
SW03	5S50202002	SW TACT	JTM-1108B 2C-2P	
SW04	5S50202002	SW TACT	JTM-1108B 2C-2P	
Z601	5PSFE55MB-	FILTER CERA	SFE 5.5MB	TF, TK, VA
Z601	5PSFE60MB-	FILTER CERA	SFE 6.0MB	TU
Z602	5PSFE65MB-	FILTER CERA	SFE 6.5MB	TK, VA
Z701	5PTPS55MB-	FILTER CERA	TPS 5.5MB	TF, TK, VA
Z701	5PTPS60MB-	FILTER CERA	TPS 6.0MB	TU
Z702	5PTS65MB-	FILTER CERA	TPS 6.5MB(EFC-S6R5ME3)	TK, VA

★ DIFFERENT PART FOR SYSTEM (1)

NO	LOC	P-B/G (TF)	P/S-B/G.D/K N-3/4 (AV) (TK)	P/S-B/G.D/K S-L/L' (VA)	P-I (TU)	REMARK
1	VT101	TEKE4-073A	<—	VTSS-7SZ3	DET-7BZ	
2	SF101	G1966M	K2955M	<—	J1953M	
3	Z701	TPS5.5MB	<—	<—	TPS6.0MB	
4	Z702		TPS6.5MB	<—		
5	Z601	SFE5.5MB	<—	<—	SFE6.0MB	
6	Z602		SFE6.5MB	<—		
7	I502		TDA8395	<—		
8	I701	TDA8362B	<—	TDA8362	TDA8362B	
9	R108	JUMPER	<—	18K	JUMPER	
10	R110	OPEN	<—	100K	<—	
11	R113	470	<—	220	470	
12	R118	OPEN	<—	100K	<—	
13	R501	47K		47K	<—	
14	C105	10u	<—	33u	10u	
15	C107	4.7u	<—	<—		
16	C108	0.01	<—	<—		
17	C109	4.7u	<—	<—		
18	C110	0.01	<—	<—		
19	C111	4.7u	<—	<—	16V 100u	
20	C801	220v 0.47	200v 0.1	<—	<—	
21	C802	200V 0.47	200V 0.1	<—	<—	
22	P801A	CW-4232	KKP-419C	<—	CW-3201	
23	IA01		4053		<—	
24	QA01		KTC3198Y	<—		
25	QA02		KTA1266Y	<—		
26	QA03		KTC3198Y	<—		
27	DA01		1N4148	<—		
28	RA01		47K	<—		
29	RA02		10K	<—		
30	RA03		10K	<—		
31	RA04		22K	<—		
32	RA05		10K	<—		
33	RA06		47K	<—		
34	RA07		1K	<—		
35	RA08		1/4W1	<—		
36	RA09		820K	<—		
37	CA01		10u	<—		
38	IL01			TDA3843		
39	QL01			KTC3198Y		
40	QL02			KTC3198Y		
41	GL03			KTC3198Y		
42	QL04			KTC3198Y		
43	QL05			KTC3198Y		
44	QL06			KTC1266Y		
45	DL01			1S2186		
46	DL02			1S2186		
47	DL03			1N4148		
48	DL04			1S2186		
49	DL05			1N4148		
50	DL06			1N4148		
51	DL07			IS2186		
52	DL08			IS2186		
53	LL01			10uH		
54	LL02			10uH		
55	RL01			2.2K		

NO	LOC	P-B/G (TF)	P/S-B/G.D/K N-3/4 (AV) (TK)	P/S-B/G.D/K S-L/L' (VA)	P-I (TU)	REMARK
56	RL02			10K		
57	RL03			10K		
58	RL04			10K		
59	RL05			22K		
60	RL06			68K		
61	RL07			3K		
62	RL08			1K		
63	RL09			1K		
64	RL10			4.7K		
65	RL11			39K		
66	RL12			100K		
67	RL13			4.7K		
68	RL14			22K		
69	RL15			39K		
70	RL17			4.7K		
71	RL24			22K		
72	RL25			43K		
73	CL01			0.01		
74	CL02			0.01		
75	CL03			33u16V		
76	CL04			4.7u		
77	CL05			4.7u		
78	CL06			1u		
79	CL07			2200		
80	CL08			10		
81	CL09			TZ03R300B		
82	CL12			10u 25V		
83	SL01			L9461M		
84	JL01	OPEN	<—	JUMPER		
85	QV03	KTA1266Y	<—	<—		
86	QV04	KTA1266Y	<—	<—		
87	DV04		1N4148			
88	DV05		1N4148			
90	DV08				1N4148	
91	DV09			1N4148		
92	DV12			1N4148		
93	DV13	1N4148		1N4148		
94	RV29	4.7K	<—	<—		
95	RV30	4.7K	<—	<—		
97	XN01		3.58MHz			
99	QN01		KTC3198Y			
99	LN01		100u			
100	RN01		47K			
101	RN02		1K			
102	CN01		220P			
103	CN02		1000			
104	JB01	JUMBER	<—	OPEN	JUMPER	
105	JB02	JUMPER	<—	OPEN	JUMPER	
106	JK01	JUMPER	OPEN	JUMPER	<—	
107	IT01	SAA5280PE	SAA5281PH		SAA5280PE	
108	IT02	KA2186	<—	KA2186		
109	XT01	27MHz	<—	27MHz		
110	DT05	1N4148	<—	1N4148		

NO	LOC	P-B/G (TF)	P/S-B/G.D/K N-3/4 (AV) (TK)	P/S-B/G.D/K S-L/L' (VA)	P-I (TU)	REMARK
111	F801C				FUSE COVER	S/N 4857621200
112	LA02				CRT BS LABEL	S/N 4859704500
113	M511	SHIELD CASE				S/N 4857235800
114	M512A	SHILED PLATE				S/N 4857235900
115	PA01A		CONN WAFER	<—		S/N 4859231720
116	PA01B		CONN AS	<—		S/N 4850704016
117	Q801L				LABEL WARNING	S/N 4855801719
118	P805	TUNER GROUND AS		<—		S/N 4851900130
119	R114	3.6M	<—	<—	100K	

★★ DIFFERENT PART FOR SYSTEM (2)

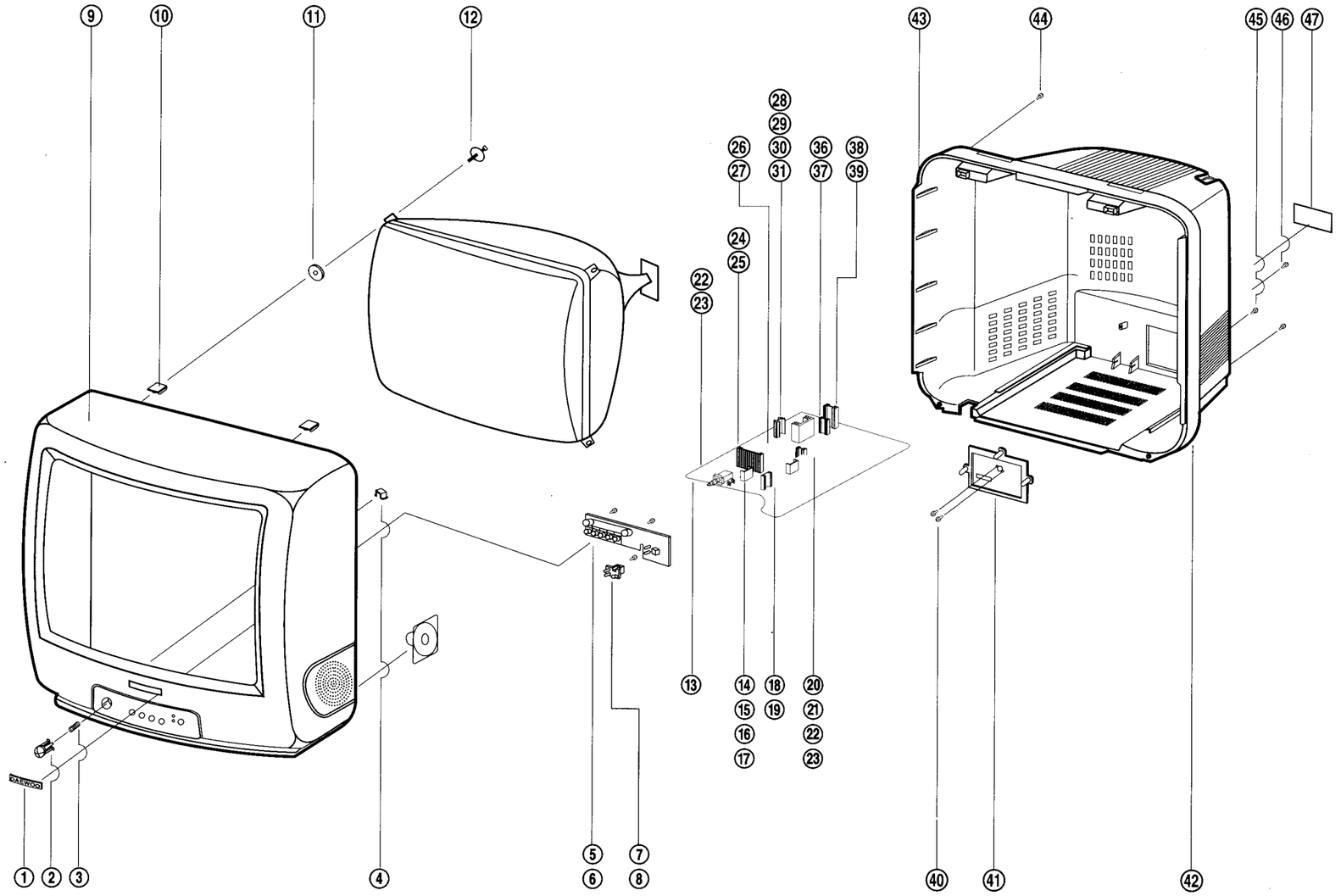
NO.	LOC.	14"			20"			21"		
1	CRT	ORION	PHILIPS	POLKOLOR	ORION	SAMSUNG	POLKOLOR	ORION	PHILIPS	SAMSUNG
		A34JLL90X	A34EAC01X06	A33EFU13X01	A48JLL90X	A48ECR11X16	A48EEV33X01	A51JSW90X	A51EAL55X01	A51EER11X40
2	CRT SOCKET	ISM-01	<—	CTV3240-0501	ISM-03	CTV3240-0501	<—	ISM-03	CTV3240-0501	
3	D/COIL	DC-1450	<—	<—	DC-2050	<—	<—	DC-2070	<—	
4	T402	DCF-2077D	FSA24008S	1142.5025B	DCF-2217J	FSA-17013M	FSA26012M	DCF-2217L	FSA-17013M	
5	L403	L-125	L-102	L-76	L-102	L-62	L-76	L-102	L-76	
6	L405	AZ-9004Y	<—	<—	AZ-9004Y	JUMPER	<—	AZ-9004Y	JUMPER	
7	R308	2W 270	2W 120	<—	2W 270	<—	<—	2W 270	<—	
8	R411	1/2W 160K	<—	<—	1/2W 110K	<—	<—	<—	<—	
9	R423	2W 56	<—	<—	2W 56	JUMPER	<—	2W 56	<—	
10	R421	1W 5.6(F)	1W 3.9(F)	1W 0.68(F)	1W 6.2(F)	2W 2.7(F)	2W 2.4(F)	1W 6.2(F)	1W 6.8(F)	
11	R501	2W 9.1K	<—	<—	2W 12K	<—	<—	<—	<—	
12	R511	2W 9.1K	<—	<—	2W 12K	<—	<—	<—	<—	
13	R521	2W 9.1K	<—	<—	2W 12K	<—	<—	<—	<—	
14	RV09	2.2K	<—	<—	2.7K	<—	<—	<—	<—	
15	RV17	11K	<—	<—	4.7K	<—	<—	<—	<—	
16	C409	1.6KV 6000	1.6KV 6200	1.6KV 6000	1.6KV 6900	1.6KV 8200	1.6KV 8200	1.6KV 7500	1.6KV 8200	
17	C410	2KV 470	2KV 680	2KV 220	2KV 470	2KV 1000		2KV 470	<—	
18	C411	200V 0.47μ	200V 0.51μ	<—	200V 0.47μ	200V 0.51μ	<—	200V 0.33μ	200V 0.47μ	
19	R801	901P44E 180YR16	<—	<—	<—	<—	<—	PTH451C262 BF140M270	<—	
20	C412	160V 3.3MF	160V 1MF	<—	160V3.3MF	160V 1MF	<—	160V 3.3MF	160V 1MF	
21	R525	220	120	<—	220	120	<—	220	120	
22	P401	YFW500-05	YFW500-06	<—	YFW500-05	YFW500-06	<—	<—	<—	

★★★ DIFFERENT PART FOR SPEAKER (OPTION)

NO		1SPK (2W)	2SPK (2W+2W)
1	SPK	8 OHM	16 OHM
2	SPK	-	16 OHM
3	R620	13K	7.5K

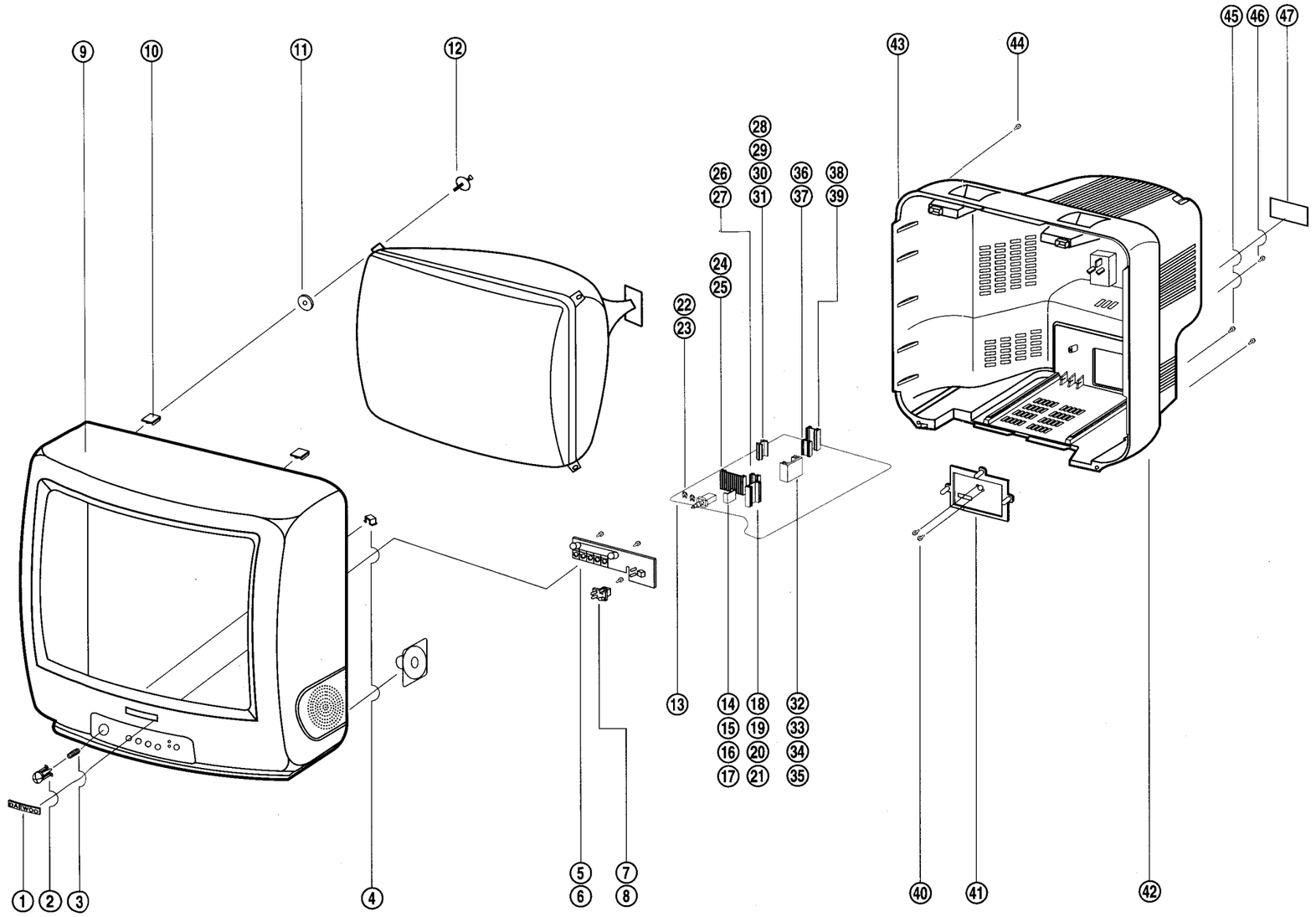
■ EXPLODED VIEW

■ DTX-14A1



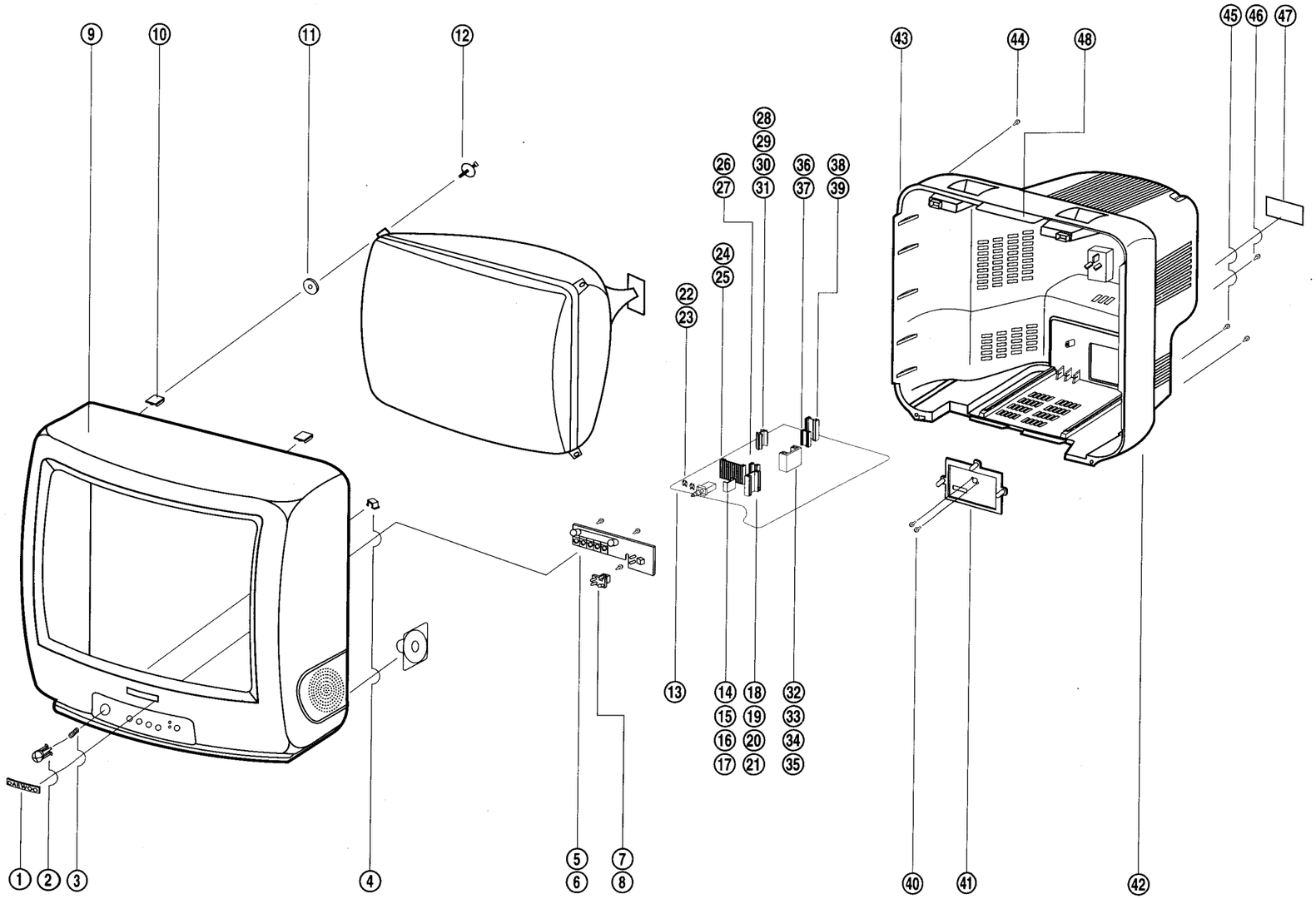
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4855613600	MARK BRAND	1	COPER T0.4	
2	4854838001	BUTTON POWER	1	ABS BK	
3	4856717900	SPRING	1	SWPA	
4	4853525500	HOLDER CORD	1	FR HIPS BK	
5	4854921601	BUTTON CTRL	1	ABS BK	
6	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	
7	4855519601	DECO SENSOR	1	PMMA CL	
8	7128301011	SCREW TAPPING	1	T2S WAS 3X10 MFZN	7+9
9	4852047801	MASK FRONT	1	HIPS BK	
10	4853311601	RETAINER BACK	2	HIPS NC	
11	4856215402	WASHER RUBBER	4	CR	
12	4856212000	SCREW CRT FIX	4	SWRM+SK-5(L=30)	CRT+9
13		MAIN PCB	1		CP-330
14	4857025400	HEAT SINK	1	A1050P-H24 T2.0	
15	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
16	7392300011	NUT HEX	1	6N-2-3 MFZN	
17	4856215200	WASHER	1	SPCC	
18	4857024603	HEAT SINK	1	AL EX	
19	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
20	7392300011	NUT HEX	1	6N-2-3 MFZN	
21	4856215200	WASHER	1	SPCC	
22	4857415001	CLIP FUSE	1	PFC5000-0702	
23	4857415001	CLIP FUSE	1	PFC5000-0702	
24	4857024400	HEAT SINK	1	AL EX	
25	7271301011	SCREW TAPPING	1	TT3 PAN 3X10 MFZN	
26	4857026900	HEAT SINK	1	AL EX	
27	7121300811	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
28	4857024500	HEAT SINK	1	AL EX	
29	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
30	7392300011	NUT HEX	1	6N-2-3 MFZN	
31	4856215200	WASHER	1	SPCC	
32	4857024603	HEAT SINK	1	AL EX	
33	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
34	7392300011	NUT HEX	1	6N-2-3 MFZN	
35	4856215200	WASHER	1	SPCC	
36	4857026900	HEAT SINK	1	AL EX	
37	7121301011	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
38	4857024900	HEAT SINK	1	AL EX	
39	7121301011	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
40	7128261011	SCREW TAPPING	2	T2S WAS 2.6X10 MFZN	13+41
41	4853624803	TERMINAL ANT	1	HIPS BK	
42	4852135300	COVER BACK	1	FR HIPS BK	
43	4857817611	CLOTH BLACK	3	FELT T0.7 L=200	
44	7122401411	SCREW TAPPING	4	T2S TRS 4X14 MFZN	9+42
45	7122401411	SCREW TAPPING	3	T2S TRS 4X14 MFZN	41+42
46	7122401411	SCREW TAPPING	1	T2S TRS 4X14 MFZN	FBT+42
47	4855415800	SPEC PLATE	1	150ART P/E FILM	

■ DTX-20A1



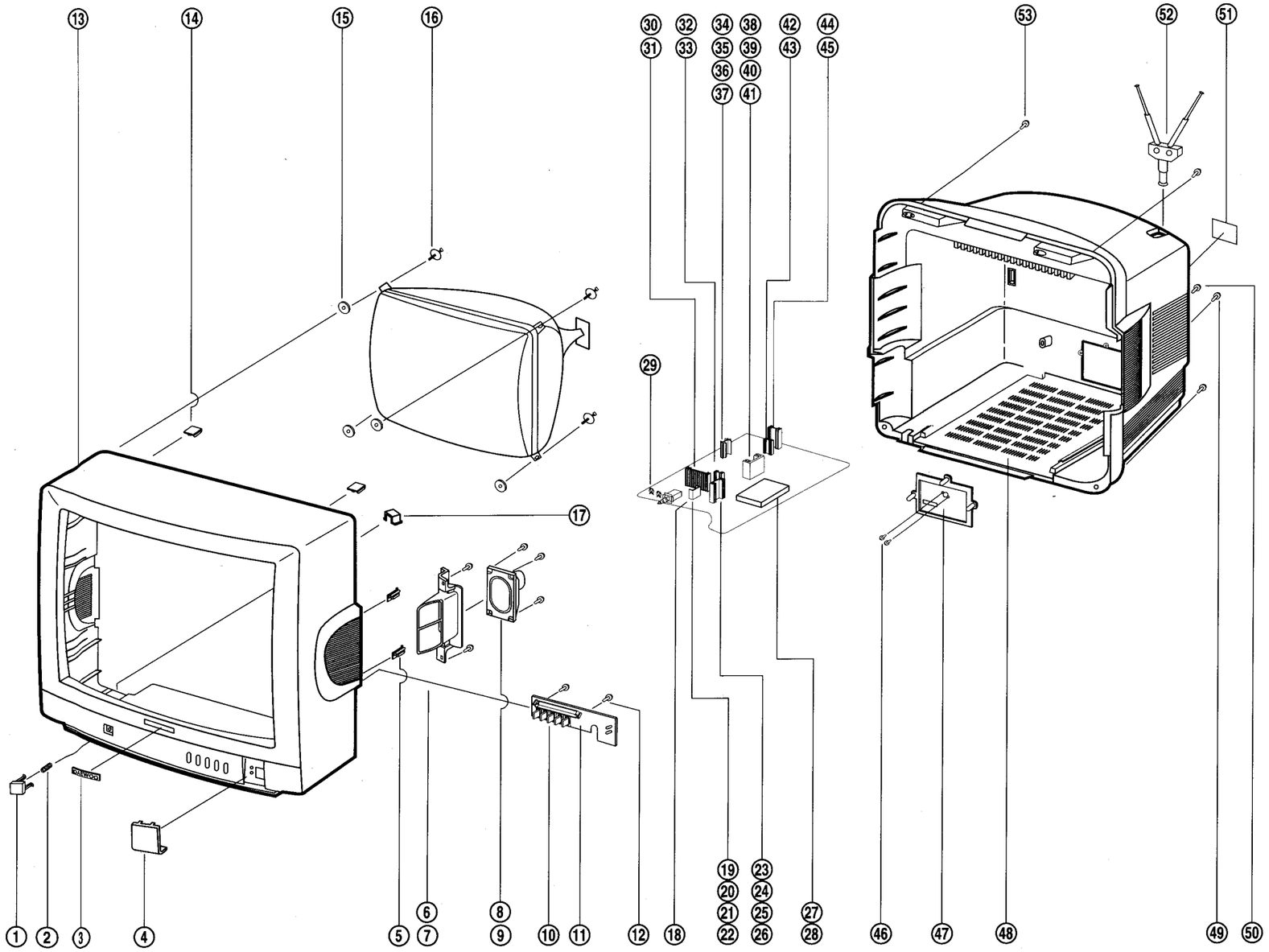
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4855615900	MARK BRAND	1	A1050P-H24 T0.4	
2	4854838101	BUTTON POWER	1	ABS BK	
3	4856717900	SPRING	1	SWPA	
4	4853525500	HOLDER CORD	1	FR HIPS BK	
5	4854920702	BUTTON	1	ABS BK	20C1
6	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	5+9
7	4855519701	DECO SENSOR	1	PMMA CL	
8	7128301011	SCREW TAPPING	1	T2S WAS 3X10 MFZN	7+9
9	4852047901	MASK FRONT	1	HIPS BK	
10	4853311601	RETAINER BACK	2	HIPS NC	
11	9976210400	WASHER RUBBER	4	RUBBER BK	POLKOLOR
11	4856215402	WASHER RUBBER	4	CR	
12	4856212000	SCREW CRT FIX	4	SWRM+SK-5(L=30)	CRT+9
13		MAIN PCB	1		CP-330
14	4857025400	HEAT SINK	1	A1050P-H24 T2.0	
15	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
16	7392300011	NUT HEX	1	6N-2-3 MFZN	
17	4856215200	WASHER	1	SPCC	
18	4857024603	HEAT SINK	1	AL EX	
19	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
20	7392300011	NUT HEX	1	6N-2-3 MFZN	
21	4856215200	WASHER	1	SPCC	
22	4857415001	CLIP FUSE	1	PFC5000-0702	
23	4857415001	CLIP FUSE	1	PFC5000-0702	
24	4857024400	HEAT SINK	1	AL EX	
25	7271301011	SCREW TAPPING	1	TT3 PAN 3X10 MFZN	
26	4857026900	HEAT SINK	1	AL EX	
27	7121300811	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
28	4857024500	HEAT SINK	1	AL EX	
29	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
30	7392300011	NUT HEX	1	6N-2-3 MFZN	
31	4856215200	WASHER	1	SPCC	
32	4857024603	HEAT SINK	1	AL EX	
33	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
34	7392300011	NUT HEX	1	6N-2-3 MFZN	
35	4856215200	WASHER	1	SPCC	
36	4857026900	HEAT SINK	1	AL EX	
37	7121300811	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
38	4857024900	HEAT SINK	1	AL EX	
39	7121300811	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
40	7128261011	SCREW TAPPING	2	T2S WAS 2.6X10 MFZN	13+14
41	4853624803	TERMINAL ANT	1	HIPS BK	
42	4852135400	COVER BACK	1	FR HIPS BK	
43	4857817611	CLOTH BLACK	3	FELT T0.7 L=200	
44	7122401411	SCREW TAPPING	4	T2S TRS 4X14 MFZN	9+42
45	7122401411	SCREW TAPPING	3	T2S TRS 4X14 MFZN	41+42
46	7122401411	SCREW TAPPING	1	T2S TRS 4X14 MFZN	FBT+42
47	4855415800	SPEC PLATE	1	150ART P/E FILM	

■ DTX-21A1



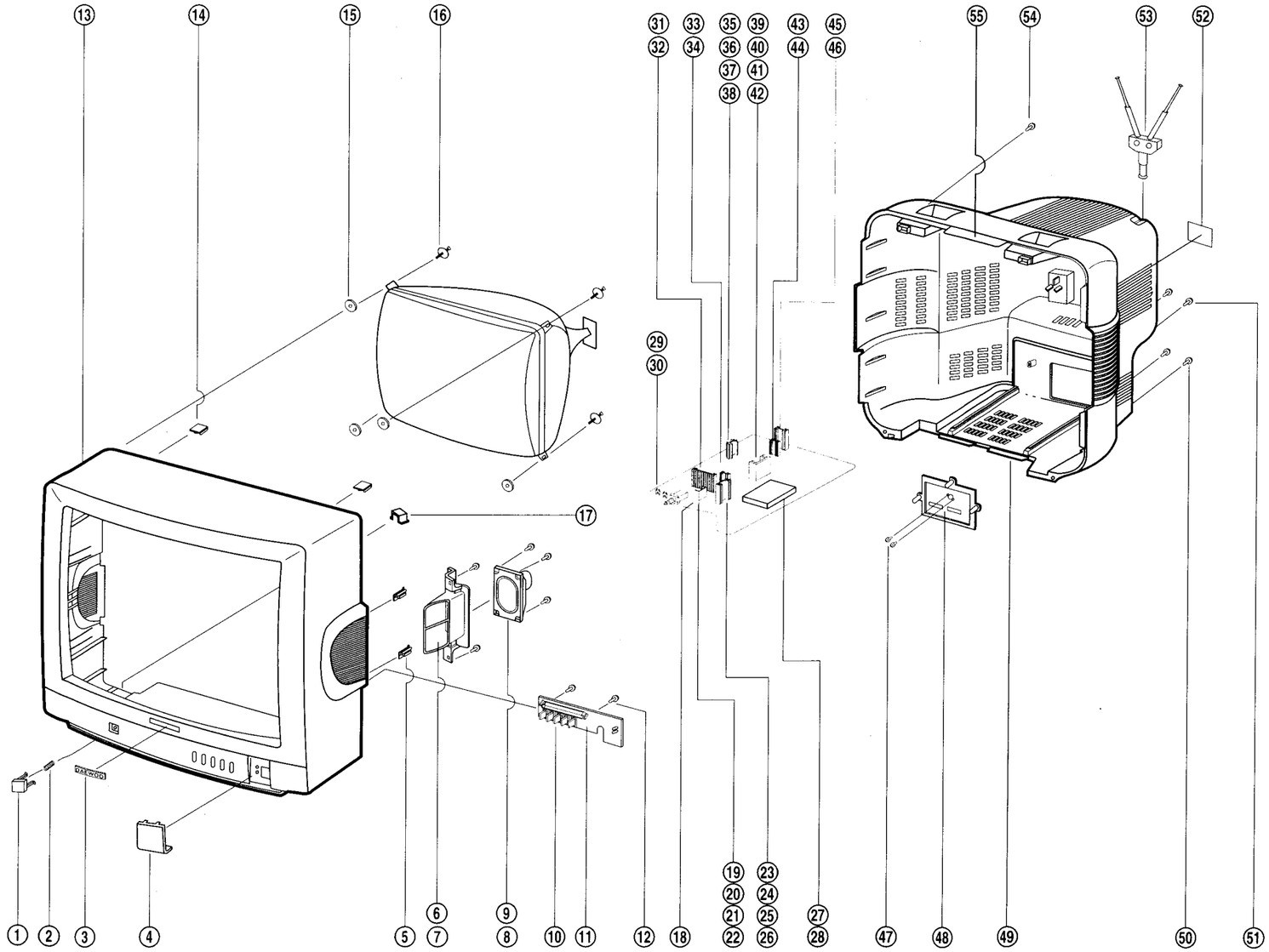
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4855615900	MARK BRAND	1	A1050P-H24 T0.4	
2	4854838201	BUTTON POWER	1	ABS BK	
3	4856717900	SPRING	1	SWPA	
4	4853525500	HOLDER CORD	1	FR HIPS BK	
5	4854921701	BUTTON	1	ABS BK	
6	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	5+9
7	4855519801	DECO SENSOR	1	PMMA CL	
8	7128301011	SCREW TAPPING	1	T2S WAS 3X10 MFZN	7+9
9	4852048001	MASK FRONT	1	HIPS BK	
10	4853311601	RETAINER BACK	2	HIPS NC	
11	4856215402	WASHER RUBBER	4	CR	
12	4856212000	SCREW CRT FIX	4	SWRM+SK-5(L=30)	CRT+9
13		MAIN PCB	1		CP-330
14	4857025400	HEAT SINK	1	A1050P-H24 T2.0	
15	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
16	7392300011	NUT HEX	1	6N-2-3 MFZN	
17	4856215200	WASHER	1	SPCC	
18	4857024603	HEAT SINK	1	AL EX	
19	4856012310	SCREW SPECIAL	1	PAN3X10 MFZN	
20	7392300011	NUT HEX	1	6N-2-3 MFZN	
21	4856215200	WASHER	1	SPCC	
22	4857415001	CLIP FUSE	1	PFC5000-0702	
23	4857415001	CLIP FUSE	1	PFC5000-0702	
24	4857024400	HEAT SINK	1	AL EX	
25	7271301011	SCREW TAPPING	1	TT3 PAN 3X10 MFZN	
26	4857026900	HEAT SINK	1	AL EX	
27	7121300811	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
28	4857024500	HEAT SINK	1	AL EX	
29	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
30	7392300011	NUT HEX	1	6N-2-3 MFZN	
31	4856215200	WASHER	1	SPCC	
32	4857024603	HEAT SINK	1	AL EX	
33	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
34	7392300011	NUT HEX	1	6N-2-3 MFZN	
35	4856215200	WASHER	1	SPCC	
36	4857026900	HEAT SINK	1	AL EX	
37	7121300811	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
38	4857024900	HEAT SINK	1	AL EX	
39	7121300811	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
40	7128261011	SCREW TAPPING	1	T2S WAS 2.6X10 MFZN 13+41	
41	4853625803	TERMINAL ANT.	1	HIPS BK	
42	4852135500	COVER BACK	1	FR HIPS BK	
43	4857817610	CLOTH BLACK	2	FELT T0.7 L=300	
44	7122401411	SCREW TAPPING	4	T2S TRS 4X14 MFZN	9+42
45	7122401411	SCREW TAPPING	3	T2S TRS 4X14 MFZN	41+42
46	7122401411	SCREW TAPPING	1	T2S TRS 4X14 MFZN	FBT+42
47	4855415800	SPEC PLATE	1	150ART P/E FILM	
48	4857817611	CLOTH BLACK	1	FELT T0.7 L=200	

■ DTX-14B1



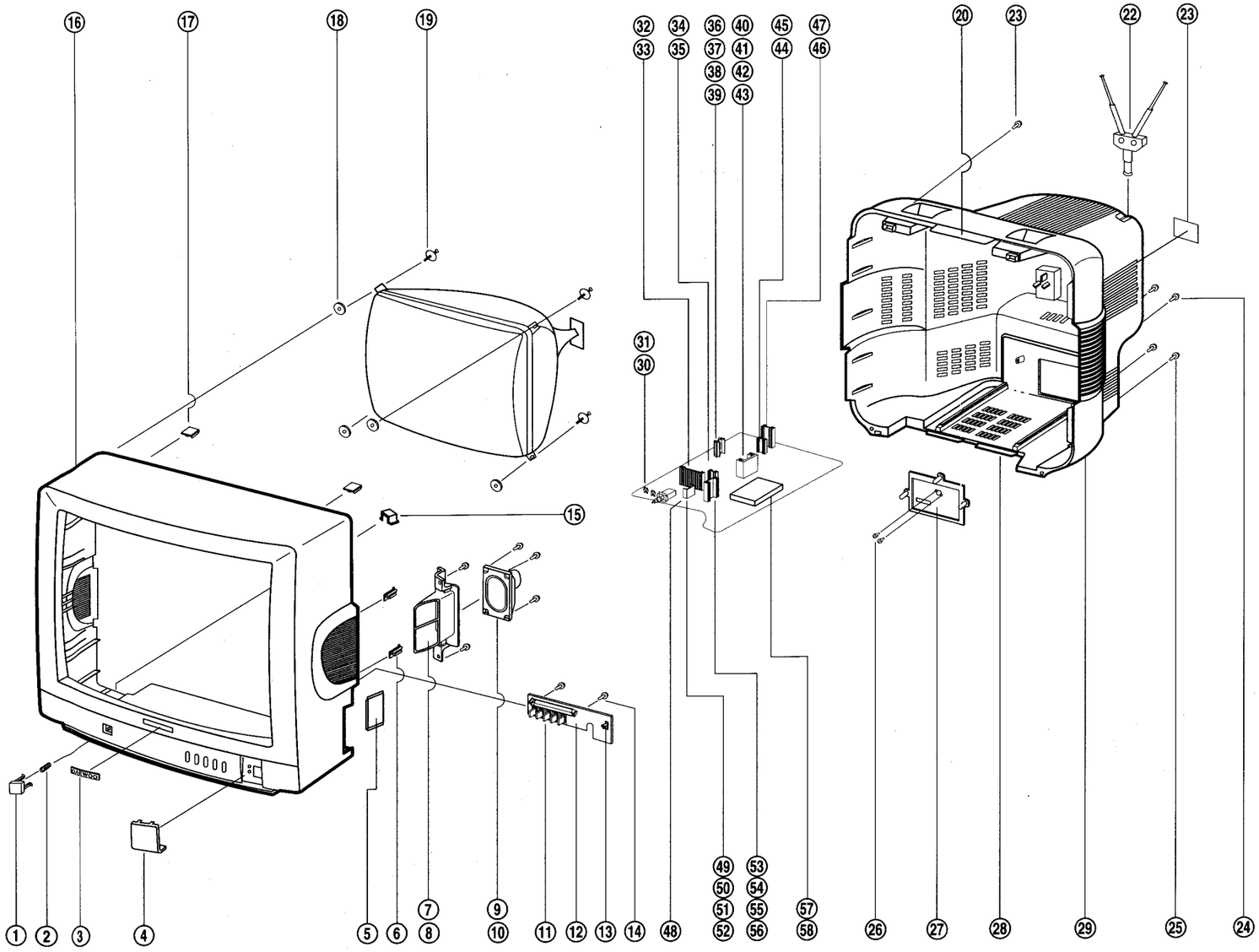
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4854837101	BUTTON POWER	1	ABS BK	
2	4856717900	SPRING	1	SWPA	
3	4855613600	MARK BRAND	1	COPPER T0.4	
4	4855518701	DECO SENSOR	1	P.C SMOG	
5	4853743001	RETA	2	HIPS NC	
6	4853945201	BRKT SPKR	1	HIPS BK	
7	7122401411	SCREW TAPPING	2	T2S TRS 4X14 MFZN	RETA+BRKT
8	4858304920	SPEAKER	1	5W 8 OHM MSF-2D4SB53D	
9	7128301011	SCREW TAPPING	4	T2S WAS 3X10 MFZN	SPKR+BRKT
10	4854920901	BUTTON	1	ABS BK	
11		CONTROL PCB	1		
12	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	
13	4852046701	MASK FRONT	1	HIPS BK	
14	4853311601	RETAINER BACK	2	HIPS NC	
15	4856215402	WASHER RUBBER	4	CR	
16	4856212000	SCREW CRT FIX	4	SWRM+SK-5(L=30)	
17	4853525500	HOLDER CORD	1	FR HIPS GY	
18		MAIN PCB	1		CP-330
19	4857025400	HEAT SINK	1	A1050P-H24 T2.0	
20	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
21	7392300011	NUT HEX	1	6N-2-3 MFZN	
22	4856215200	WASHER	1	SPCC	
23	4857024603	HEAT SINK	1	AL EX	
24	4856012310	SCREW SPECIAL	1	PAL 3X10 MFZN	
25	7392300011	NUT HEX	1	6N-2-3 MFZN	
26	4856215200	WASHER	1	SPCC	
27	4857235800	SHIELD CASE	1	SPTH-C T0.25	
28	4857235900	SHIELD PLATE	1	SPTH-C T0.25	
29	4857415001	CLIP FUSE	1	PFC5000-0702	
30	4857024400	HEAT SINK	1	AL EX	
31	7271301011	SCREW TAPPING	1	TT3 PAN 3X10 MFZN	
32	4857026900	HEAT SINK	1	AL EX	
33	7121300811	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
34	4857024500	HEAT SINK	1	AL EX	
35	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
36	7392300011	NUT HEX	1	6N-2-3 MFZN	
37	4856215200	WASHER	1	SPCC	
38	4857024603	HEAT SINK	1	AL EX	
39	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
40	7392300011	NUT HEX	1	6N-2-3 MFZN	
41	4856215200	WASHER	1	SPCC	
42	4857026900	HEAT SINK	1	AL EX	
43	7121301011	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
44	4857024900	HEAT SINK	1	AL EX	
45	7121301011	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
46	7128261011	SCREW TAPPING	2	T2S WAS 2.6X10MFZN	TERM+PLUG
47	4853624803	TERMINAL ANT	1	HIPS BK	
48	4852134200	COVER BACK	1	FR HIPS BK	
49	7122401411	SCREW TAPPING	3	T2S TRS 4X14 MFZN	C/B+TERM
50	7122401411	SCREW TAPPING	1	T2S TRS 4X14 MFZN	C/B+FBT
51	4855415800	SPEC PLATE	1	150ART P/E FILM	
52	4850A02510	ANT ROD	1		

■ DTX-20B1



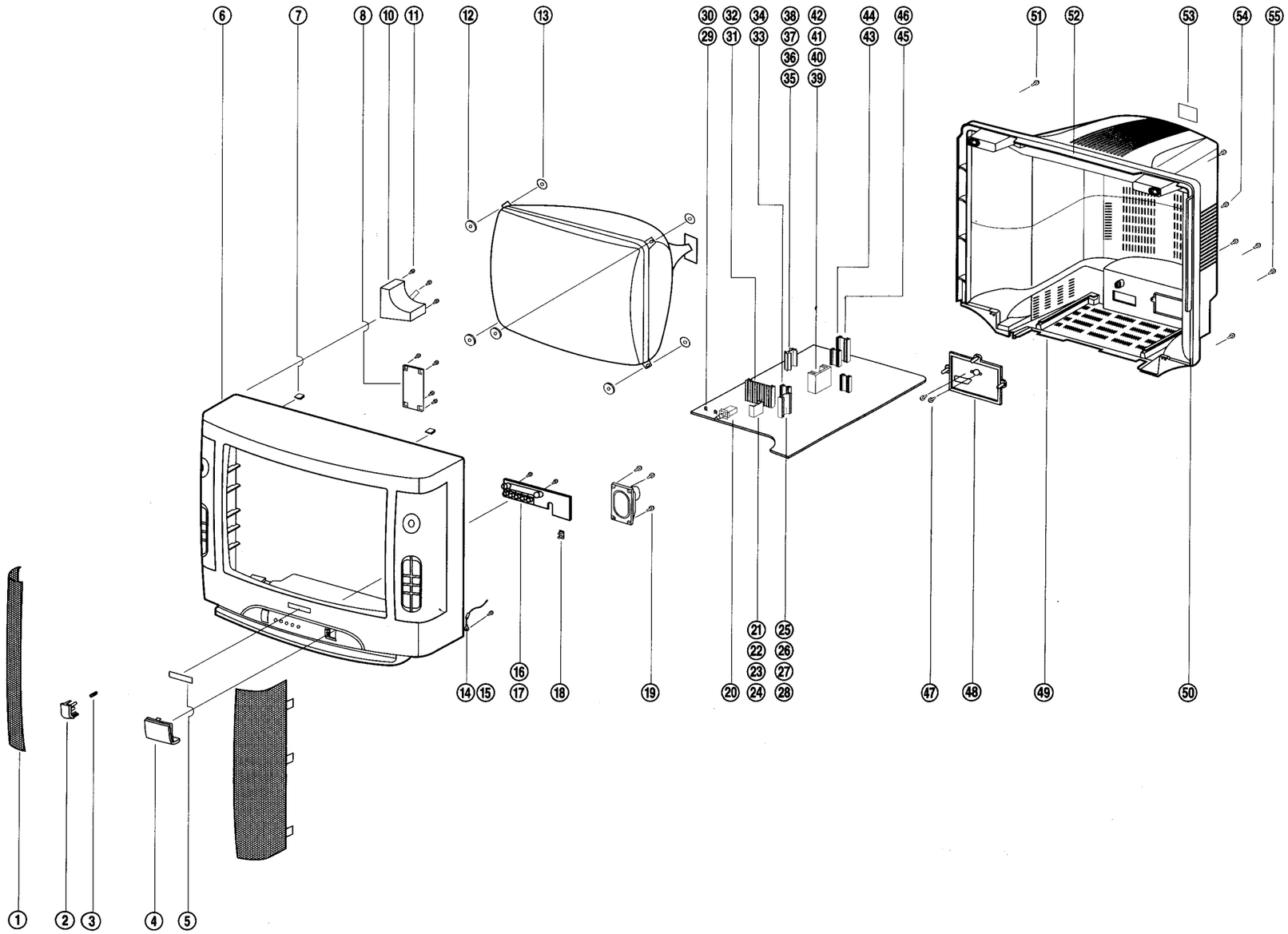
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4854837201	BUTTON POWER	1	ABS BK	
2	4856717900	SPRING	1	SWPA	
3	4855615900	MARK BRAND	1	COPPER T0.4	
4	4855518801	DECO SENSOR	1	P.C SMOG	
5	4853743001	RETA	2	HIPS NC	
6	4853945201	BRKT SPKR	1	HIPS BK	
7	7122401411	SCREW TAPPING	2	T2S TRS 4x14 MFZN	RETA+BRKT
8	4858304920	SPEAKER	1	5W 8 OHM MSF-2D4SB53D	
9	7128301011	SCREW TAPPING	4	T2S WAS 3x10 MFZN	SPKR+BRKT
10	4854921001	BUTTON	1	ABS BK	
11		CONTROL PCB	1		
12	7128301011	SCREW TAPPING	2	T2S WAS 3x10 MFZN	
13	4852046801	MASK FRONT	1	HIPS BK	
14	4853311601	RETAINER BACK	2	HIPS NC	
15	9976210400	WASHER RUBBER	4	RUBBER BK	POLKOLOR
16	4856212000	SCREW CRT FIX	4	SWRM+SK-5 (L=30)	
17	4853525500	HOLDER CORD	1	FR HIPS GY	
18		MAIN PCB	1		CP-330
19	4857025400	HEAT SINK	1	A1050P-H24 T2.0	
20	4856012310	SCREW SPECIAL	1	PAN 3x10 MFZN	
21	7392300011	NUT HEX	1	6N-2-3 MFZN	
22	4856215200	WASHER	1	SPCC	
23	4857024603	HEAT SINK	1	AL EX	
24	4856012310	SCREW SPECIAL	1	PAN 3x10 MFZN	
25	7392300011	NUT HEX	1	6N-2-3 MFZN	
26	4856215200	WASHER	1	SPCC	
27	4857235800	SHIELD CASE	1	SPTH-C T0.25	
28	4857235900	SHIELD PLATE	1	SPTH-C T0.25	
29	4857415001	CLIP FUSE	1	PFC5000-0702	
30	4857415001	CLIP FUSE	1	PFC5000-0702	
31	4857024400	HEAT SINK	1	AL EX	
32	7271301011	SCREW TAPPING	1	AL EX	
33	4857026900	HEAT SINK	1	AL EX	
34	7121300811	SCREW TAPPING	1	T2S PAN 3x10 MFZN	
35	4857024500	HEAT SINK	1	AL EX	
36	4856012310	SCREW SPECIAL	1	PAN 3x10 MFZN	
37	7392300011	NUT HEX	1	6N-2-3 MFZN	
38	4856215200	WASHER	1	SPCC	
39	4857024603	HEAT SINK	1	AL EX	
40	4856012310	SCREW SPECIAL	1	PAN 3x10 MFZN	
41	7392300011	NUT HEX	1	6N-2-3 MFZN	
42	4856215200	WASHER	1	SPCC	
43	4857026900	HEAT SINK	1	AL EX	
44	7121301011	SCREW TAPPING	1	T2S PAN 3x10 MFZN	
45	4857024900	HEAT SINK	1	AL EX	
46	7121301011	SCREW TAPPING	1	T2S PAN 3x10 MFZN	
47	7128261011	SCREW TAPPING	2	T2S WAS 2.6x10MFZN	TERM+PLUG
48	4853624803	TERMINAL ANT	1	HIPS BK	
49	4852134300	COVER BACK	1	FR HIPS BK	
50	7122401411	SCREW TAPPING	3	T2S TRS 4x14 MFZN	C/B+TERM
51	7122401411	SCREW TAPPING	1	T2S TRS 4x14 MFZN	C/B+FBT
52	4855415800	SPEC PLATE	1	150ART P/E FILM	
53	4850A02510	ANT ROD	1		
54	7122401411	SCREW TAPPING	4	T2S TRS 4x14 MFZN	M/F+C/B
55	4857817620	CLOTH BLACK	1	FELT T0.5 L=100	

■ DTX-21B1



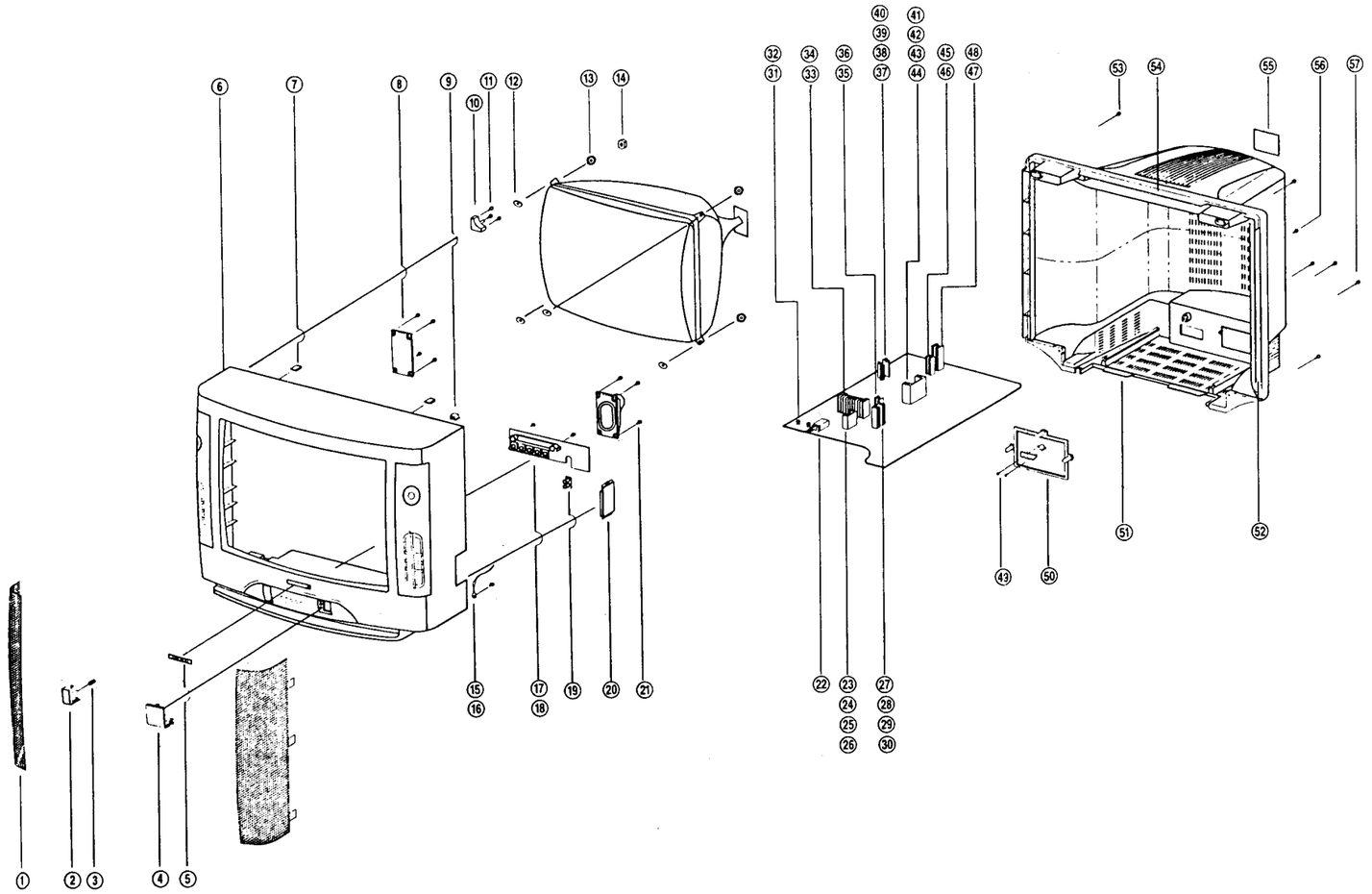
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4854837301	BUTTON POWER	1	ABS BK	
2	4856717900	SPRING	1	SWPA	
3	4855615900	MARK BRAND	1	A1050P-H24 T0.4	
4	4855518901	DECO SENSOR	1	P.C SMOG	
5	4852317602	PANEL A/V	1	HIPS BK	
6	4853743001	RETA	2	HIPS NC	
7	4853945201	BRKT SPKR	1	HIPS BK	
8	7122401411	SCREW TAPPING	2	T2S TRS 4x14 MFZN	RETA+BRKT
9	4858304920	SPEAKER	1	5W 8 OHM MSF-2D4SB53D	
10	7128301011	SCREW TAPPING	4	T2S WAS 3x10 MFZN	SPKR+BRKT
11	4854921101	BUTTON	1	ABS BK	
12		CONTROL PCB	1		
13	4853528101	LED HOLDER	1	HIPS BK	
14	7128301011	SCREW TAPPING	2	T2S WAS 3x10 MFZN	
15	4853525500	HOLDER CORD	1	FR HIPS BK	
16	4852046901	MASK FRONT	1	HIPS BK	
17	4853311601	RETAINER BACK	2	HIPS NC	
18	4856215402	WASHER RUBBER	4	CRT	
19	4856212000	SCREW CRT FIX	4	SWRM+SK-5 (L=30)	
20	4857817620	CLOTH BLACK	1	FELT T0.5 L=100	
21	7122401411	SCREW TAPPING	4	T2S TRS 4x14 MFZN	M/F+C/B
22	4850A02510	ANT ROD	1		
23	4855415800	SPEC PLATE	1	150ART P/E FILM	
24	7122401411	SCREW TAPPING	1	T2S TRS 4x14 MFZN	C/B+FBT
25	7122401411	SCREW TAPPING	3	T2S TRS 4x14 MFZN	C/B+TERM
26	7128261011	SCREW TAPPING	2	T2S WAS 2.6x10MFZN	TERM+PLUG
27	4853624803	TERMINAL ANT	1	HIPS BK	
28	4852134400	COVER BACK	1	FR HIPS BK	
29	4857817620	CLOTH BLACK	4	FELT T0.5 L=100	
30	4857415001	CLIP FUSE	1	PFC5000-0702	
31	4857415001	CLIP FUSE	1	PFC5000-0702	
32	4857024400	HEAT SINK	1	AL EX	
33	7271301011	SCREW TAPPING	1	TT3 PAN 3x10 MFZN	
34	4857026900	SCREW TAPPING	1	T2S PANE 3x10 MFZN	
35	7121300811	SCREW TAPPING	1	TT3 PAN 3x10 MFZN	
36	4857024500	HEAT SINK	1	AL EX	
37	4856012310	SCREW SPECIAL	1	PAN 3x10 MFZN	
38	7392300011	NUT HEX	1	6N-2-3 MFZN	
39	4856215200	WASHER	1	AL EX	
40	4857024603	HEAT SINK	1	AL EX	
41	4856012310	SCREW SPECIAL	1	PAN 3x10 MFZN	
42	7392300011	NUT HEX	1	6N-2-3 MFZN	
43	4856215200	WASHER	1	PSCC	
44	4857026900	HEAT SINK	1	AL EX	
45	7121301011	SCREW TAPPING	1	T2S PAN 3x10 MFZN	
46	4857024900	HEAT SINK	1	AL EX	
47	7121301011	SCREW TAPPING	1	T2S PAN 3x10 MFZN	
48		MAIN PCB	1		CP-330
49	4857025400	HEAT SINK	1	A1050P-H24 T2.0	
50	4856012310	SCREW SPECIAL	1	PAN 3x10 MFZN	
51	7392300011	NUT HEX	1	6N-2-3 MFZN	
52	4856215200	WASHER	1	SPCC	
53	4857024603	HEAT SINK	1	AL EX	
54	4856012310	SCREW SPECIAL	1	PAN 3x10 MFZN	
55	7392300011	NUT HEX	1	6N-2-3- MFZN	
56	4856215200	WASHER	1	SPCC	
57	4857235800	SHIELD CASE	1	SPTH-C T0.25	
58	4857235900	SHIELD PLATE	1	SPTH-C T0.25	

■ DTX-20C1



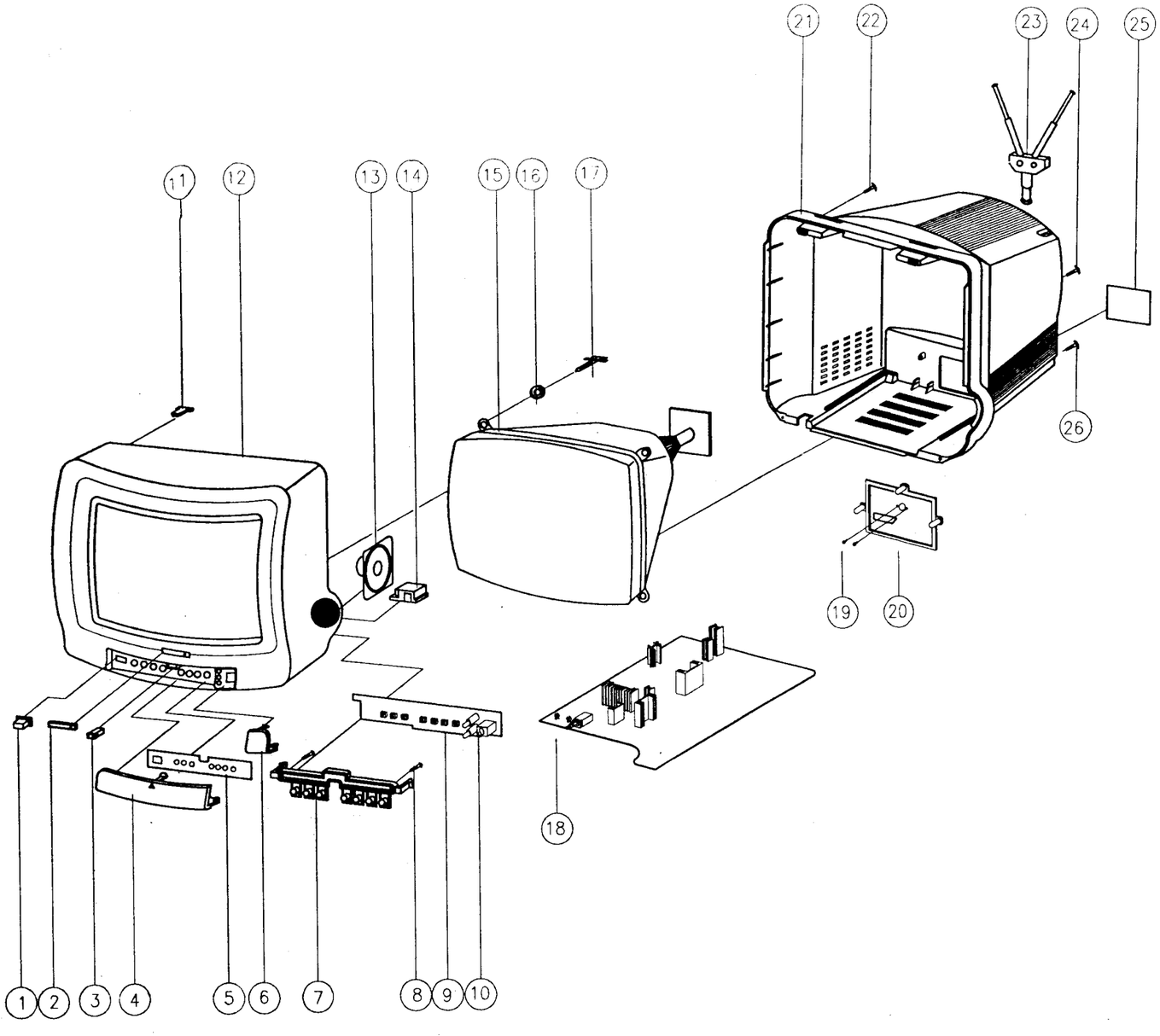
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4852524900	GRILL	2	EGI T0.5+SPONGE	
2	4854836801	BUTTON POWER	1	ABS BK	
3	4856717900	SPRING	1	SWPA	
4	4855518401	DECO SENSOR	1	P.C SMOG	
5	4855615900	MARK BRAND	1	A1050P-H24 T0.4	
6	4852046401	MASK FRONT	1	HIPS BK	
7	4853311601	RETAINER BACK	2	HIPS BK	
8	4857528600	COVER SPKR	1	PVC T1.0	
9	4853525500	HOLDER CORD	1	FR HIPS BK	
10	4853115001	BRKT CRT	4	ABS NC	
11	7121401611	SCREW TAPPING	12	T2S PAN 4X16 MFZN	
12	4856215402	WASHER RUBBER	4	CR	
12	9976210400	WASHER RUBBER	4	RUBBER BK	POLKOLOR
13	4856212000	SCREW CRT FIX	4	SWRM+SK-5 (L+30)	
14	4851900120	GRILL GROUND AS	2	DS-W1007-RC5R6M	
15	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	
16	4854920701	BUTTON	1	ABS BK	
17	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	
18	4853528101	HOLDER	1	HIPS BK	
19	7128301011	SCREW TAPPING	8	T2S WAS 3X10 MFZN	
20		MAIN PCB AS	1		CO-330
21	4857025400	HEAT SINK	1	AL EX	
22	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
23	4856215200	WASHER	1	SPCC	
24	7392300011	NUT HEX	1	6N-2-3 MFZN	
25	4857024603	HEAT SINK	1	AL EX	
26	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
27	4856215200	WASHER	1	SPCC	
28	7392300011	NUT HEX	1	6N-2-3 MFZN	
29	4857415001	CLIP FUSE	2	PFC5000-0702	
30	4857621200	INSU COVER	1	PVC T1.0 94V-0	
31	4857024400	HEAT SINK	1	AL EX	
32	7271301011	SCREW TAPTITE	1	TT3 PAN 3X10 MFZN	
33	4857026900	HEAT SINK	1	AL EX	
34	7121260811	SCREW TAPPING	1	T2S PAN 3X8 MFZN	
35	4857024500	HEAT SINK	1	A1050P-H24 T2.0	
36	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
37	7392300011	NUT HEX	1	6N-2-3 MFZN	
38	4856215200	WASHER	1	SPCC	
39	4857024605	HEAT SINK	1	AL EX	
40	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
41	7392300011	NUT HEX	1	6N-2-3 MFZN (C/TV)	
42	4856215200	WASHER	1	SPCC	
43	4857026900	HEAT SINK	1	AL EX	
44	7121300811	SCREW TAPPING	1	T2S PAN 3X8 MFZN	
45	4857024900	HEAT SINK	1	AL EX	
46	7121301011	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
47	7128261011	SCREW TAPPING	2	T2S WAS 2.6X10 MFZN	
48	4853624803	TERMINAL ANT	1	HIPS BK	
49	4852133900	COVER BACK	1	FR HIPS BK	
50	4857817610	CLOTH BLACK	2	FELT T0.7 L-300	
51	7122401411	SCREW TAPPING	4	T2S TRS 4X14 MFZN	BC+MF
52	4857817611	CLOTH BLACK	1	FELT T0.7 L=200	
53	4855415800	SPEC TAPPING	1	150ART P/E FILM	
54	7122401411	SCREW TAPPING	1	T2S TRS 4X14 MFZN	CB+FBT
55	7122401411	SCREW TAPPING	3	T2S TRS 4X14 MFZN	CB+TERM

■ DTX-21C1



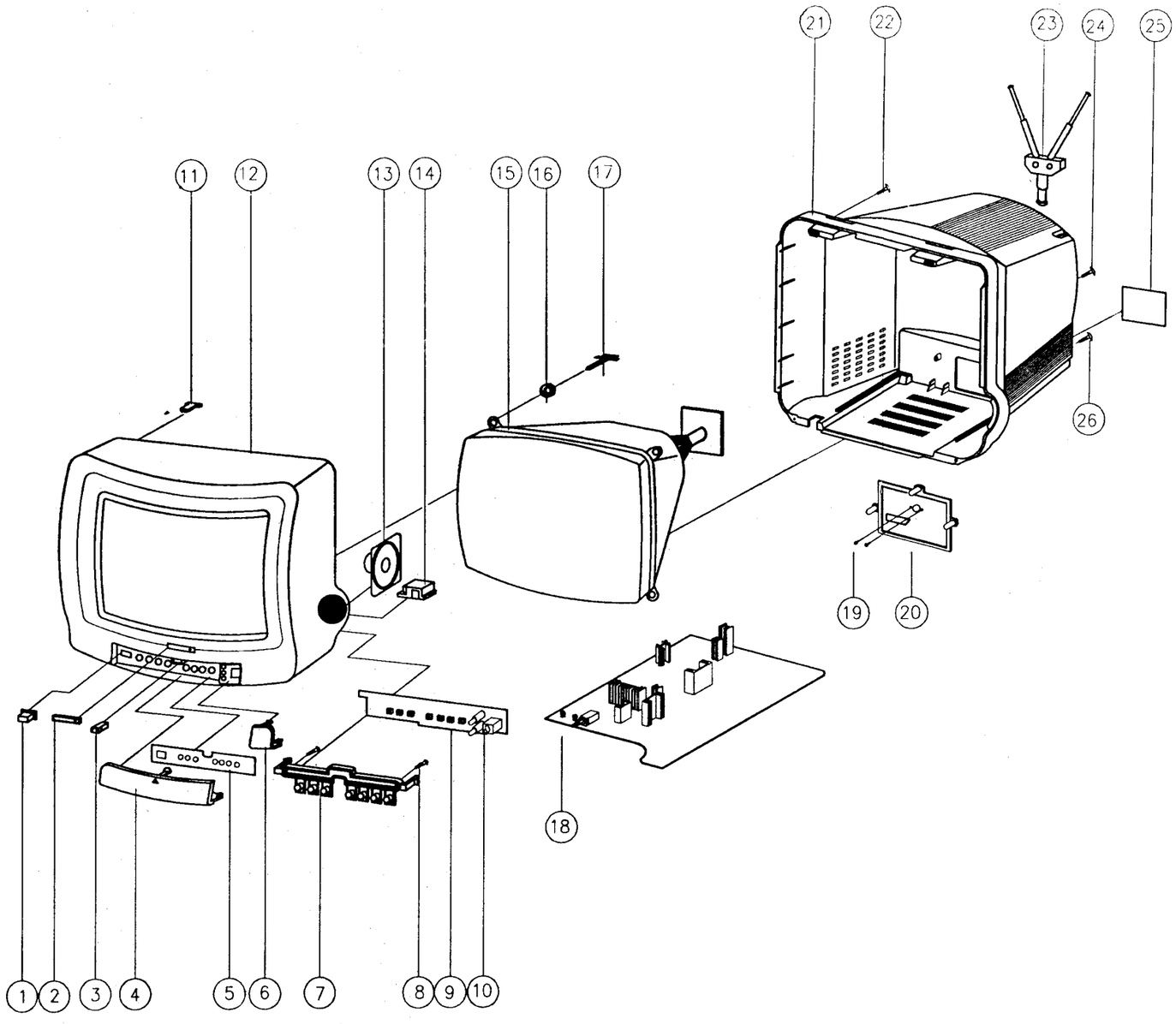
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4852525200	GRILL	2	EGI T0.5+SPONGE	
2	4854837402	BUTTON POWER	1	ABS BK	
3	4856717900	SPRING	1	SWPA	
4	4855519001	DECO SENSOR	1	P.C SMOG	
5	4855615900	MARK BRAND	1	A105OP-H24 T0.4	
6	4852047001	MASK FRONT	1	HIPS BK	
7	4853311601	RETAINER BACK	2	HIPS NC	
8	4857528600	COVER SPKR	1	PVB T1.0	
9	4853525500	HOLDER CORD	1	FR HIPS BK	
10	4853414401	BRKT CRT	4	ABS NC	
11	7121401411	SCREW TAPPING	12	T2S PAN 4X14 MFZN	
12	4856214800	WASHER RUBBER	4	TMR-CA/NF BK T2	
13	4856213200	WASHER CRT FIX	4	SK-5 B.K T1.2	
14	7391500011	NUT HEX	4	6N-1-5 MFZN	
15	4851900120	SPEAKER GROUND AS.	2	DS-W1007-RC5R6M	
16	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	
17	4854920701	BUTTON	1	ABS BK	
18	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	
19	4853528101	HOLDER	1	HIPS BK	
20	4852317602	PANEL A/V	1	HIPS BK	
21	7128301011	SCREW TAPING	8	T2S WAS 3X10 MFZN	
22		MAIN PCB AS	1		CP-330
23	4857025400	HEAT SINK	1	AL EX	
24	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
25	4856215200	WASHER	1	SPCC	
26	7392300011	NUT HEX	1	6N-2-3 MFZN	
27	4857024603	HEAT SINK	1	AL EX	
28	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
29	4856215200	WASHER	1	SPCC	
30	7392300011	NUT HEX	1	6N-2-3 MFZN	
31	4857415001	CLIP FUSE	2	PFC5000-0702	
32	4857621200	INSU COVER	1	PVC T1.0 94V-0	
33	4857024400	HEAT SINK	1	ALEX	
34	7271301011	SCREW TAPTITE	1	TT3 PAN 3X10 MFZN	
35	4857026900	HEAT SINK	1	AL EX	
36	7121260811	SCREW TAPPING	1	T2S PAN 3X8 MFZN	
37	4857024500	HEAT SINK	1	A1050P-H24 T2.0	
38	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
39	7392300011	NUT HEX	1	6N-2-3 MFZN	
40	4856215200	WASHER	1	SPCC	
41	4857024605	HEAT SINK	1	AL EX	
42	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
43	7392300011	NUT HEX	1	6N-2-3 MFZN (C/TV)	
44	4856215200	WASHER	1	SPCC	
45	4857026900	HEAT SINK	1	AL EX	
46	7121300811	SCREW TAPPING	1	T2S PAN 3X8 MFZN	
47	4857024900	HEAT SINK	1	AL EX	
48	7121301011	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
49	7128261011	SCREW TAPPING	2	T2S WAS 2.6X10 MFZN	
50	4853624803	TERMINAL ANT	1	HIPS BK	
51	4852134500	COVER BACK	1	FR HIPS BK	
52	4857817610	CLOTH BLACK	2	FELT T0.7 L=300	
53	7122401411	SCREW TAPPING	4	T2S TRS 4X14 MFZN	BC+MF
54	4857817611	CLOTH BLACK	1	FELT T0.7 L=200	
55	4855415800	SPEC PLATE	1	150ART P/E FILM	
56	7122401411	SCREW TAPPING	1	T2S TRS 4X14 MFZN	BC+FBT
57	7122401411	SCREW TAPPING	3	T2S TRS 4X14 MFZN	BC+TERM

■ DTX-14D1



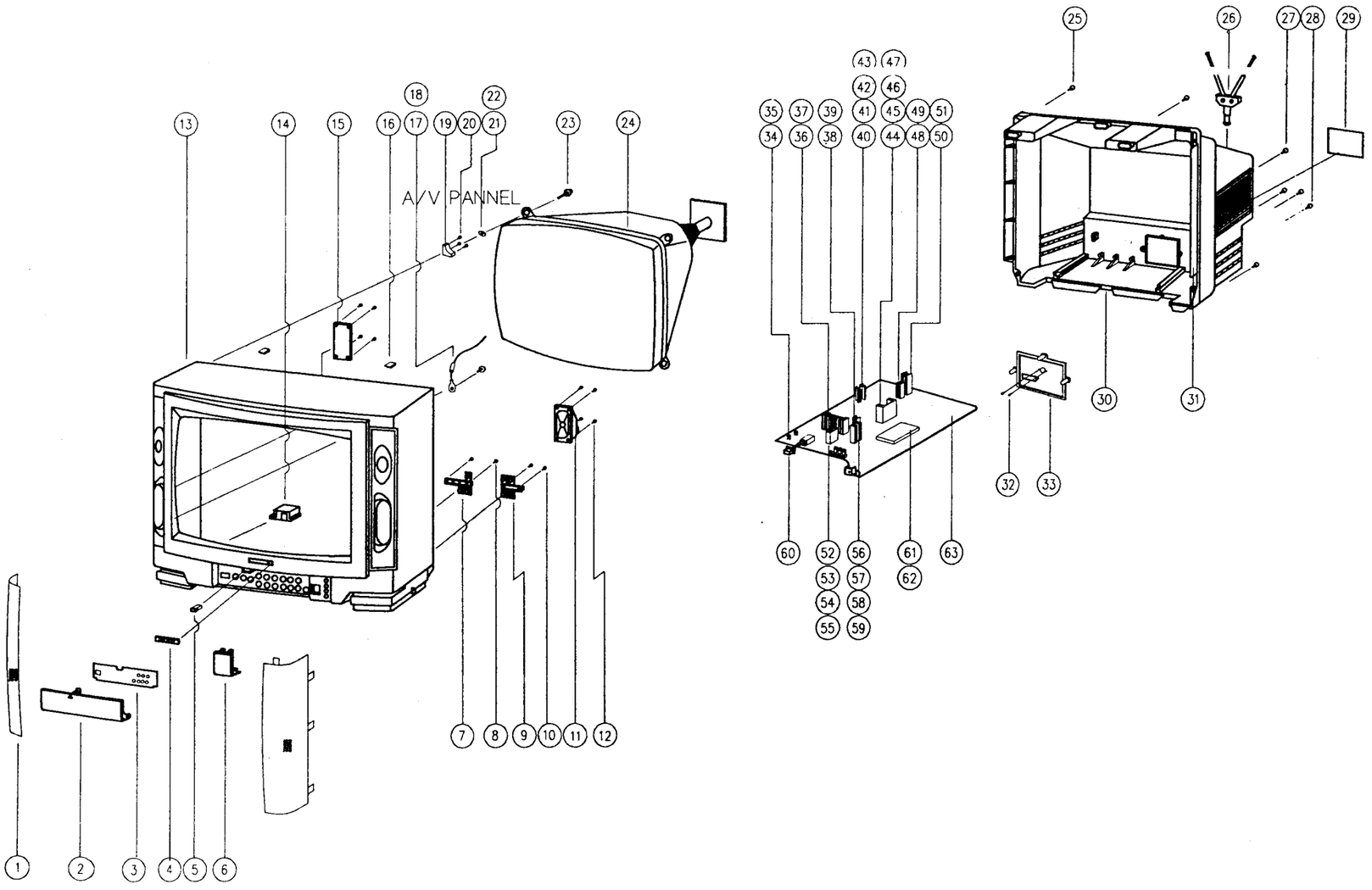
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4854814400	BUTTON POWER	1	ABS BK	
2	4855616900	BRAND MARK	1	A1050P-H24	
3	4857923300	DOOR LOCK	1	LA701 (KIFCO)	
4	4852816301	DOOR	1	ABS BK	
5	4855054001	DECO CTRL	1	PVC T0.2	
6	4855520601	DECO SENSOR	1	PC GRAY	
7	4854922502	BUTTON	1	ABS BK	
8	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	BUTTON+M/F
9		CTRL PCB	1		
10	4853529600	HOLDER LED	2	FR HIPS BK	
11	4853311601	RETA BACK	2	HIPS NC	
12	4852049001	MASK FRONT	1	HIPS BK	
13		SPEAKER	1		
14	4853525500	HOLDER CORD	1	FR HIPS BK	
15		CRT	1		
16	4856215402	WASHER RUBBER	4	CR	
17	4856212000	SCREW CRT FIX	4	SWRM+SK-5(L=30)	CRT+BRKT
18		CP-330 PCB AS	1		
19	7128261011	SCREW TAPPING	2	T2S WAS 2.6X10 MFZN	13+14
20	4853624803	TERMINAL ANT.	1	HIPS BK	
21	4852136400	COVER BACK	1	FR HIPS BK	
22	7122401411	SCREW TAPPING	4	T2S TRS 4X14 MFZN	C/B+M/F
23	4850A02510	ANT ROD	1	TSA-8108B L=600MM	
24	7122401411	SCREW TAPPING	1	T2S TRS 4X14 MFZN	C/B+FBT
25	4855415800	PLATE SPEC	1	150ART P/E FILM	
26	7122401411	SCREW TAPPING	3	T2S TRS 4X14 MFZN	C/B+ANT

■ **DTX-20D1**



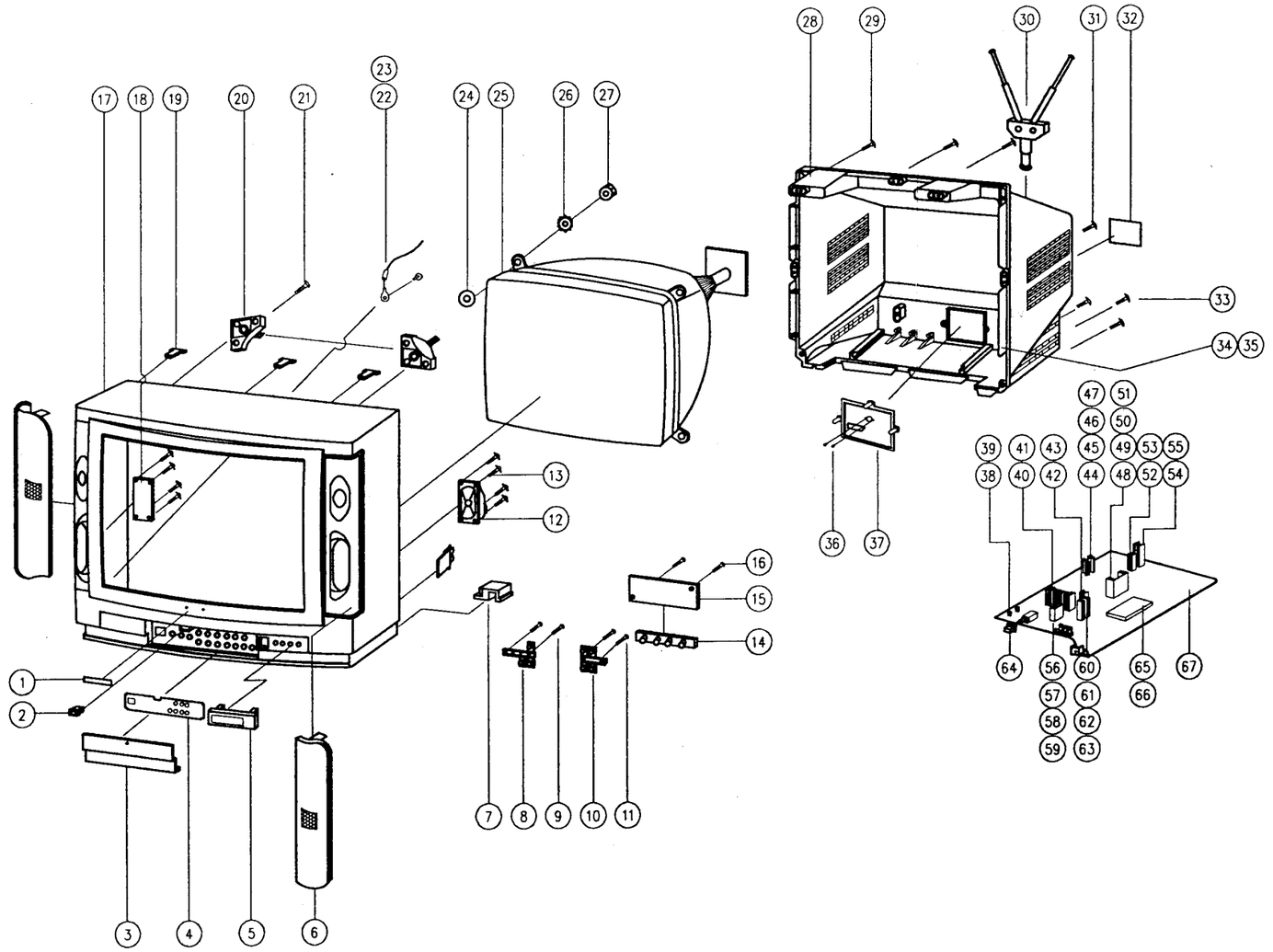
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4854814400	BUTTON POWER	1	ABS BK	
2	4855616900	BRAND MARK	1	A1050P-H24	
3	4857923300	DOOR LOCK	1	LA701 (KIFCO)	
4	4852816401	DOOR	1	ABS BK	
5	4855054101	DECO CTRL	1	PVC T0.2	
6	4855520701	DECO SENSOR	1	PC GRAY	
7	4854922502	BUTTON	1	ABS BK	
8	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	BUTTON+M/F
9		CTRL PCB	1		
10	4853529600	HOLDER LED	2	FR HIPS BK	
11	4853311601	RETA BACK	2	HIPS NC	
12	4852049101	MASK FRONT	1	HIPS BK	
13		SPEAKER	1		
14	4853525500	HOLDER CORD	1	FR HIPS BK	
15		CRT	1		
16	4856215402	WASHER RUBBER	4	CR	
17	4856212000	SCREW CRT FIX	4	SWRM+SK-5(L=30)	CRT+BRKT
18		CP-330 PCB AS	1		
19	7128261011	SCREW TAPPING	2	T2S WAS 2.6X10 MFZN	13+14
20	4853624803	TERMINAL ANT.	1	HIPS BK	
21	4852136500	COVER BACK	1	FR HIPS BK	
22	7122401411	SCREW TAPPING	4	T2S TRS 4X14 MFZN	C/B+M/F
23	4850A02510	ANT ROD	1	TSA-8108B L=600MM	
24	7122401411	SCREW TAPPING	1	T2S TRS 4X14 MFZN	C/B+FBT
25	4855415800	PLATE SPEC	1	150ART P/E FILM	
26	7122401411	SCREW TAPPING	3	T2S TRS 4X14 MFZN	C/B+ANT

■ DTX-2066



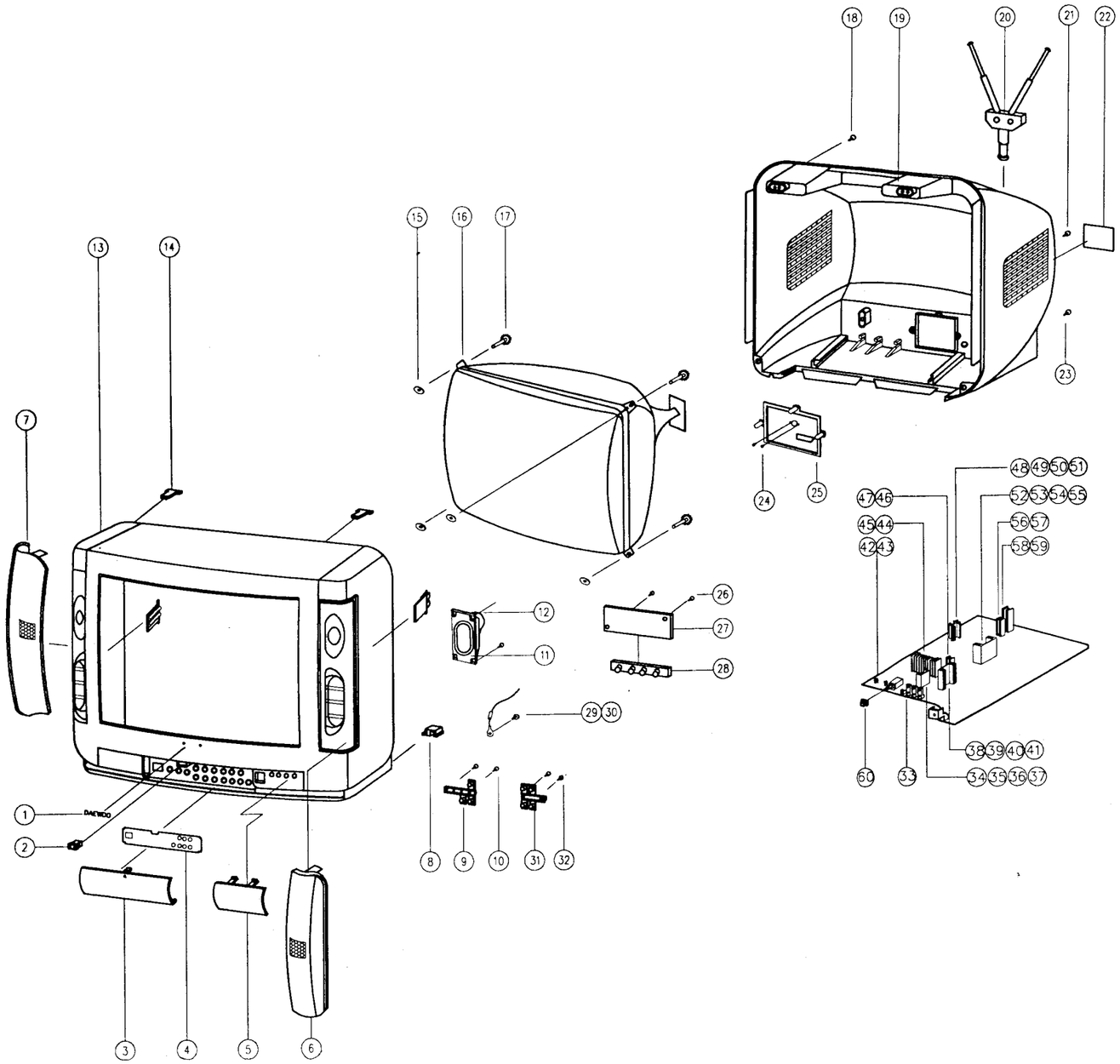
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4855617200	MARK BRAND	1	A1050P-H24	
2	4857923300	DOOR LOCK	1	LA701 (KIFCO)	
3	4852811701	DOOR	1	ABS BK	
4	4855051405	DECO CTRL	1	PVC T0.25	
5	4855514404	DECO SENSOR	1	P.C DARK RED	
6	4852520503	GRILL	2	EGI T0.8 BK	
7	4853525500	HOLDER CORD	1	FR HIPS BK	
8	4854916610	BUTTON	1	ABS BK	
9	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	BUTTON+M/F
10	4854915802	BUTTON	1	ABS BK	
11	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	BUTTON+M/F
12	4858304920	SPEAKER	1	5W 8OHM MSF-2D4SB530	
13	7122401411	SCREW TAPPING	8	T2S TRS 4X14 MFZN	SPKR+M/F
14	4853524101	HOLDER LED	1	HIPS BK	
15		PCB CONTROL	1		
16	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	PCB+M/F
17	4852041601	MASK FRONT	1	HIPS BK	
18	4857528600	COVER SPKR	1	PVC T1.0	
19	4853311601	RETAINER BACK	5	HIPS NC	
20	4853414401	BRKT CRT	4	ABS NC	
21	7121401611	SCREW TAPPING	12	T2S PAN 4X16 MFZN	BRKT+M/F
22	4851900120	GRILL GROUND AS	2	DS-W1007-RC5R6M	
23	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	
24	4856214800	WASHER RUBBER	4	TMR-CA/NF BK T2	
25		CRT	1		
26	4856213200	WASHER CRT FIX	4	SK-5 B.K T1.2	
27	7391500011	NUT HEX	4	6N-1-5 MFZN	
28	4852130100	COVER BACK	1	FR HIPS BK	
29	7122401411	SCREW TAPPING	7	T2S TRS 4X14 MFZN	M/F+C/B
30	4850A02510	ANT ROD	1	S38W2168 (L=600)	
31	7122401411	SCREW TAPPING	1	T2S TRS 4X14 MFZN	FBT+C/B
32	4855415800	SPEC PLATE	1	150ART P/E FILM (C/TV)	
33	7122401411	SCREW TAPPING	3	T2S TRS 4X14 MFZN	TERM+C/B
34	4857817610	CLOTH BLACK	2	FELT T0.7 L=300	
35	4857817611	CLOTH BLACK	2	FELT T0.7 L=200	
36	4853624803	TERMINAL ANT	1	HIPS BK	CP-330
37	7128261011	SCREW TAPPING	2	T2S PAN 3X10 MFZN	JACK+TERM
38	4857415001	CLIP FUSE	2	PFC5000-0702	
39	4857621200	INSU COVER	1	PVC T1.0 94V-0	
40	4857024400	HEAT SINK	1	AL EX	
41	7271301011	SCREW TAPTITE	1	TT3 PAN 3X10 MFZN	
42	4857026900	HEAT SINK	1	AL EX	
43	7121300811	SCREW TAPPING	1	T2S PAN 3X8 MFZN	
44	4857024500	HEAT SINK	1	AL EX	
45	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
46	7392300011	NUT HEX	1	6N-2-3 MFZN	
47	4856215200	WASHER	1	SPCC	
48	4857024605	HEAT SINK	1	AL EX	
49	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
50	7292300011	NUT HEX	1	6N-2-3 MFZN	
51	4856215200	WASHER	1	SPCC	
52	4857026900	HEAT SINK	1	AL EX	
53	7121301011	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
54	4857024900	HEAT SINK	1	AL EX	
55	72271301011	SCREW TAPTITE	1	TT3 PAN 3X10 MFZN	
56	4857025400	HEAT SINK	1	A1050PP-H24 T2.0	
57	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
58	7392300011	NUT HEX	1	6N-2-3 MFZN	
59	4856215200	WASHER	1	SPCC	
60	4857024603	HEAT SINK	1	AL EX	
61	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
62	7392300011	NUT HEX	1	6N-2-3 MFZN	
63	4856215200	WASHER	1	SPCC	
64	4854814400	BUTTON POWER	1	ABS BK	
65	4857235800	SHIELD CASE	1	SPTH-C T0.25	
66	4857235900	SHIELD PLATE	1	SPTH-C T0.25	
67	9850136506	MAIN PCB AS	1		CP-330

■ DTX-2166



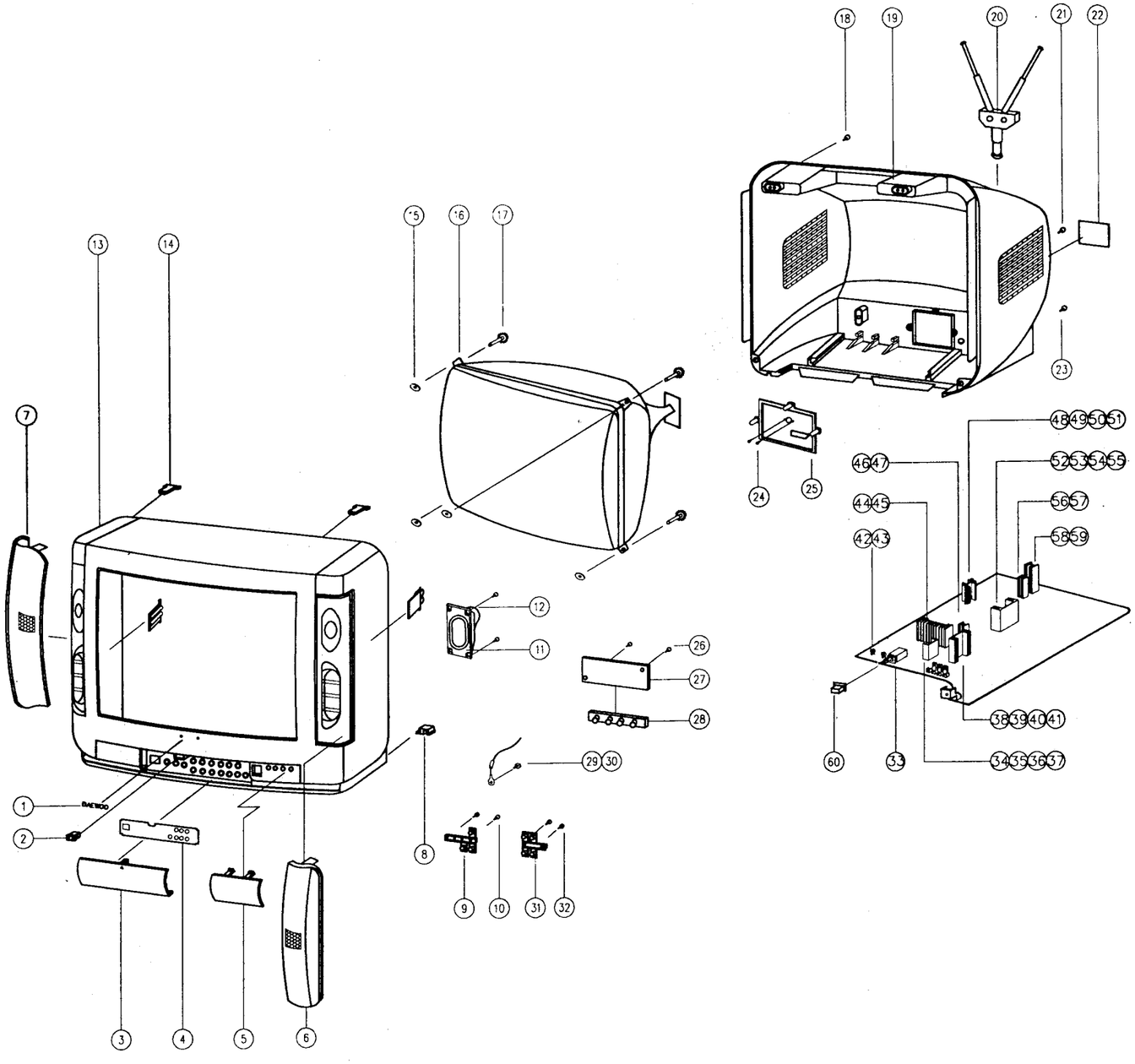
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4852519003	GRILL	2	SECC T0.8 BK	
2	4852810701	DOOR	1	ABS BK	
3	4855050605	DEC CTRL	1	ABS BK	
4	4855615900	MARK BRAND	1	A1050P-H24 T0.4	
5	4857923300	DOOR LOCK	1	LA701 (KIFCO)	
6	4855513803	DECO SENSOR	1	P.C DARK RED	
7	4854916610	BUTTON	1	ABS BK	
8	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	BUTTON+M/F
9	4854915802	BUTTON	1	ABS BK	
10	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	BUTTON+M/F
11	4858304920	SPEAKER	1	5W 8OHM MSF-2D4SB530	
12	7128301211	SCREW TAPPING	8	T2S WAS 3X12 MFZN	SPKR+M/F
13	4852040701	MASK FRONT	1	HIPS BK	
14	4853525500	HOLDER CORD	1	FR HIPS BK	
15	4857528600	COVER SPKR	1	PVC T1.0	
16	4853311601	RETAINER BACK	3	HIPS NC	
17	4851900120	GRILL GROUND AS	2	DS-W1007-RC5R6M	
18	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	
19	4853115001	BRKT CRT	4	ABS NC	
20	7121401611	SCREW TAPPING	12	T2S PAN 4X61 MFZN	BRKT+M/F
21	4856215402	WASHER RUBBER	4	CR	
22	9976210400	WASHER RUBBER	4	RUBBER BK	POLKOLOR
23	4856212000	SCREW CRT FIX	4	SWRM+SK-5 (L=30)	
24		CRT	1		
25	7122401411	SCREW TAPPING	5	T2S TRS 4X14 MFZN	M/F+C/B
26	4850A02510	ANT ROD	1	S38W2168 (L=600)	
27	7122401411	SCREW TAPPING	1	T2S TRS 4X14 MFZN	FBT+C/B
28	7122401411	SCREW TAPPING	3	T2S TRS 4X14 MFZN	TERM+C/B
29	4855415800	SPEC PLATE	1	150ART P/E FILM (C/TV)	
30	4857817611	CLOTH BLACK	2	FELT T0.7 L-200	
31	4852129500	COVER BACK	1	FR HIPS BK	
32	4853624803	TERMINAL ANT	1	HIPS BK	
33	7128261011	SCREW TAPPING	2	T2S AN 3X10 MFZN	JACK+TERM
34	4857415001	CLIP FUSE	2	PFC5000-0702	
35	4857621200	INSU COVER	1	PVC T1.0 94V-0	
36	4857024400	HEAT SINK	1	AL EX	
37	7271301011	SCREW TAPTITE	1	TT3 PAN 3X10 MFZN	
38	4857026900	HEAT SINK	1	AL EX	
39	7121300811	SCREW TAPPING	1	T2S PAN 3X8 MFZN	
40	4857024500	HEAT SINK	1	AL EX	
41	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
42	7392300011	NU THEX	1	6N-2-3 MFZN	
43	4856215200	WASHER	1	SPCC	
44	4857024605	HEAT SINK	1	AL EX	
45	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
46	7392300011	NUT HEX	1	6N-2-3 MFZN	
47	4856215200	WASHER	1	SPCC	
48	4857026900	HEAT SINK	1	AL EX	
49	7121301011	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
50	4857024900	HEAT SINK	1	AL EX	
51	7271301011	SCREW TAPTITE	1	TT3 PAN 3X10 MFZN	
52	4857025400	HEAT SINK	1	A1050PP-H24 T2.0	
53	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
54	7392300011	NUT HEX	1	6N-2-3 MFZN	
55	4856215200	WASHER	1	SPCC	
56	4857024603	HEAT SINK	1	AL EX	
57	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
58	7392300011	NUT HEX	1	6N-2-3 MFZN	
59	4856215200	WASHER	1	SPCC	
60	4854814400	BUTTON POWER	1	ABS BK	
61	4857235800	SHIELD CASE	1	SPTH-C T0.25	
62	4857235900	SHIELD PLATE	1	SPTH-C T0.25	
63	9850136506	MAIN PCB AS	1		CP-330

■ DTX-2072



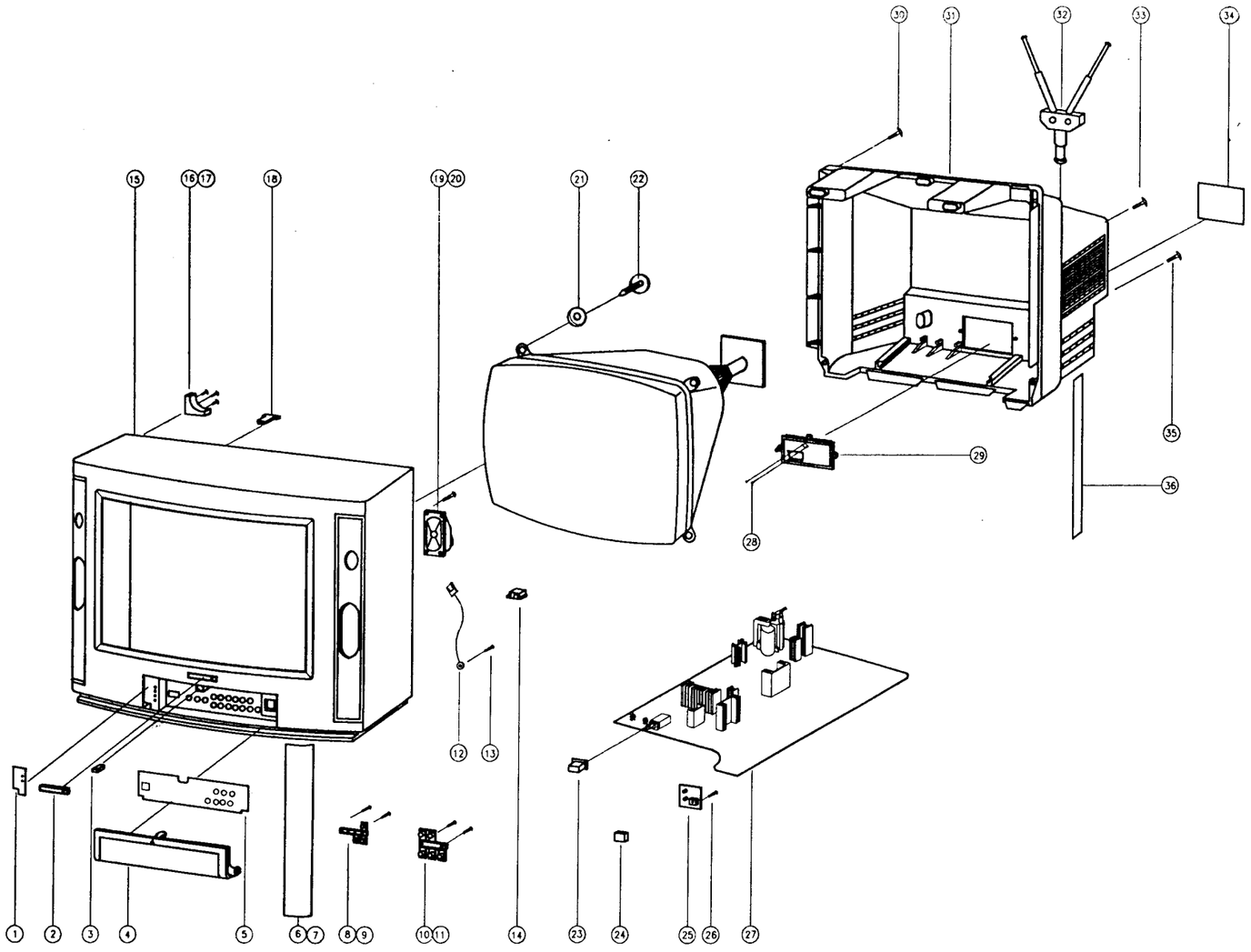
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4855617200	MARK BRAND	1	A1050P-H24	
2	4857923300	DOOR LOCK	1	LA701(KIFCO)	
3	4852815401	DOOR	1	ABS BK	
4	4855050605	DECO CTRL	1	PVC T0.25	
5	4855518104	DECO SENSOR	1	.C SMOG	
6	4852525500	GRILL R	1	EGI T0.8 BK	
7	4852525600	GRILL L	1	EGI T0.8 BK	
8	4853525500	STOP CORD	1	HIPS BK	
9	4854916610	BUTTON	1	HG ABS BK	
10	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	BUTTON+M/F
11	4858304020	SPEAKER	2	5W 80HM 125BFDLC/608BA	
12	7122401411	SCREW TAPPING	8	T2S TRS 4X14 MFZN	SPER+M/F
13	4852047201	MASK FRONT	1	HIPS BK	
14	4853311601	RETA BACK	4	HIPS BK	
15	4856214900	WASHER RUBBER	4	TMR-CA/NF BK T2	
16		CRT	1		
17	4856212000	SCREW CRT FIX	4	SWRM+SK-5(L=30)	
18	7122401611	SCREW TAPPING	6	T2S TRS 4X16 MFZN	M/F+C/B
19	4852134700	COVER BACK	1	FR HIPS BK	
20	4850A02510	ANT ROD	1	TSA-8108B L=600MM	
21	7122401611	SCREW TAPPING	1	T2S TRS 4X16 MFZN	C/B+FBT
22	4855415800	SPEC PLATE	1	150ART P/E FILM(C/TV)	
23	7122401611	SCREW TAPPING	3	T2S TRS 4X16 MFZN	C/B+TERM ANT
24	7128261011	SCREW TAPPING	2	T2S WAS 2.6X10 MFZN	
25	4853624802	TERMINAL ANT	1	HIPS BK	
26	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	
27		PCB LED	1	T1.6X17X80	
28	4853524101	HOLDER LED	1	HIPS BK	
29	4851900120	GRILL GROUND AS	2	DS-W1007-RC5RCM	
30	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	
31	4854915802	BUTTON	1	HG ABS BK	
32	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	BUTTON+M/F
33		MAIN PCB	1		CP-330
34	4857025400	HEAT SINK	1	A1050P-H24 T2.0	
35	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
36	7392300011	NUT HEX	1	6N-2-3 MFZN	
37	4856215200	WASHER	1	SPCC	
38	4857024603	HEAT SINK	1	AL EX	
39	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
40	7392300011	NUT HEX	1	6N-2-3 MFZN	
41	4856215200	WASHER	1	SPCC	
42	4857415001	CLIP FUSE	1	PFC5000-0702	
43	4857415001	CLIP FUSE	1	PFC5000-0702	
44	4857024400	HEAT SINK	1	AL EX	
45	7281301011	SCREW TAPPING	1	TT3 PAN 3X10 MFZN	
46	4857026900	HEAT SINK	1	AL EX	
47	7121300811	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
48	4857024500	HEAT SINK	1	AL EX	

■ DTX-2172



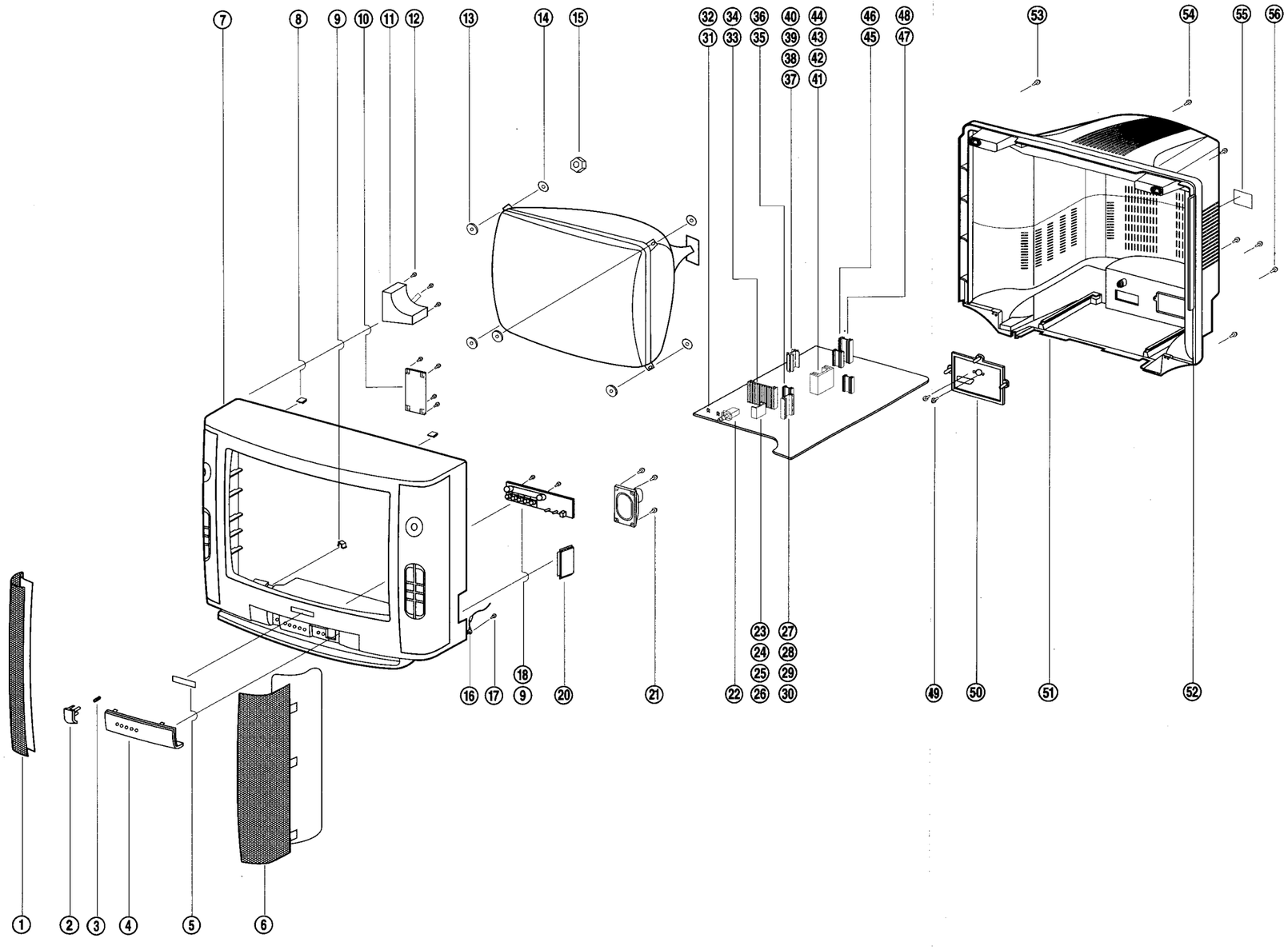
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4855617200	MARK BRAND	1	A1050P-H24	
2	4857923300	DOOR LOCK	1	LA701(KIFCO)	
3	4852815001	DOOR	1	ABS BK	
4	4855051405	DECO CTRL	1	PVC T0.25	
5	4855518203	DECO SENSOR	1	P.C SMOG	
6	4852524800	GRILL	1	EGI T0.8 BK	
7	4852525400	GRILL L	1	EGI T0.8 BK	
8	4853525500	STOP CORD	1	FR HIPS BK	
9	4854916610	BUTTON	1	HG ABS BK	
10	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	BUTTON+M/F
11	4858304020	SPEAKER	2	5W 80HM 125BFDLC/608BA	
12	7122401411	SCREW TAPPING	8	T2S TRS 4X14 MFZN	SPER+M/F
13	4852046101	MASK FRONT	1	HIPS BK	
14	4853311601	RETA BACK	1	HIPS BK	
15	4856214900	WASHER RUBBER	4	TMR-CA/NF BK T2	
16		CRT	1		
17	4856212000	SCREW CRT FIX	4	SWRM+SK-5(L=30)	
18	7122401611	SCREW TAPPING	6	T2S TRS 4X16 MFZN	M/F+C/B
19	4852133700	COVER BACK	1	FR HIPS BK	
20	4850A02510	ANT ROD	1	TSA-8108B L=600MM	
21	7122401611	SCREW TAPPING	1	T2S TRS 4X16 MFZN	C/B+FBT
22	4855415800	SPEC PLATE	1	150ART P/E FILM(C/TV)	
23	7122401611	SCREW TAPPING	3	T2S TRS 4X16 MFZN	
24	7128261011	SCREW TAPPING	2	T2S WAS 2.6X10 MFZN	C/B+TERM ANT
25	4853624802	TERMINAL ANT	1	HIPS BK	
26	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	
27		PCB LED	1	T1.6X17X80	
28	4853524101	HOLDER LED	1	HIPS BK	
29	4851900120	GRILL GROUND AS	2	DS-W1007-RC5RCM	
30	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	
31	4854915802	BUTTON	1	HG ABS BK	
32	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	BUTTON+M/F CP-330
33		MAIN PCB	1		
34	4857025400	HEAT SINK	1	A1050P-H24 T2.0	
35	4856012310	SCRW SPECIAL	1	PAN 3X10 MFZN	
36	7392300011	NUT HEX	1	6N-2-3 MFZN	
37	4856215200	WASHER	1	SPCC	
38	4857024603	HEAT SINK	1	AL EX	
39	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
40	7392300011	NUT HEX	1	6N-2-3 MFNZ	
41	4856215200	WASHER	1	SPCC	
42	4857415001	CLIP FUSE	1	PFC5000-0702	
43	4857415001	CLIP FUSE	1	PFC5000-0702	
44	4857024400	HEAT SINK	1	AL EX	
45	7271301011	SCREW TAPPING	1	TT3 PAN 3X10 MFZN	
46	4857026900	HEAT SINK	1	AL EX	
47	7121300811	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
48	4857024500	HEAT SINK	1	AL EX	
49	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
50	7392300011	NUT HEX	1	6N-2-3 MFZN	
51	4856215200	WASHER	1	SPCC	
52	4857024603	HEAT SINK	1	AL EX	
53	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
54	7392300011	NUT HEX	1	6N-2-3 MFZN	
55	4856215200	WASHER	1	SPCC	
56	4857026900	HEAT SINK	1	AL EX	
57	7121300811	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
58	4857024900	HEAT SINK	1	AL EX	
59	7121300811	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
60	4854814400	BUTTON POWER	1	ABS BK	

■ DTX-2075



NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	4855517004	DECO SENSOR	1	PVC CL T0.5	
2	4854814400	BUTTON POWER	1	ABS BK	
3	4857923300	DOOR LOCK	1	LA701 (KIFCO)	
4	4852813904	DOOR	1	ABS BK	
5	4855051405	DECO CTRL	1	PVC CL T0.2	
6	4852523503	GRILL L	1	SECC T0.8	
7	4852523403	GRILL R	1	SECC T0.8	
8	4854916610	BUTTON	1	ABS BK	
9	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	BUTTON+M/F
10	4854915802	BUTTON	1	ABS BK	
11	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	BUTTON+M/F
12	4851900120	SPEAKER GROUND AS	1	DS-W1007-RC5R6M	
13	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	SP GR AS+GRILL
14	4853525500	HOLDER CORD	1	FR HIPS BK	
15	4852045001	MASK FRONT	1	HIPS BK	
16	4853115001	BRACKET	4	ABS NC	
17	7121401611	SCREW TAPPING	12	T2S PAN 4X16 MFZN	M/F+BRKT
18	4853611601	RETAINER BACK	2	HIPS NC	
19		SPEAKER	1	3W 80HM MSF-2D4SB530	
20	7128301011	SCREW TAPPING	4	T2S WAS 3X10 MFZN	
21	4856215402	WASHER RUBBER	4	CR	
22	4856212000	SCREW CRT FIX	4	SWRM+SK-5(L=30)	CRT+BRKT
23	4854814400	BUTTON POWER	1	ABS BK	
24	4855514700	DECO SENSOR	1	P. C SMOG	
25		PCB LED AS	1		
26	7128301211	SCREW TAPPING	1	T2S WAS 3X12 MFZN	M/F+L/PCB
27		PCB MAIN MANUAL AS	1	CP-330	
28	7128261011	SCREW TAPPING	2	T2S WAS 2.6X10 MFZN	TERM+J/AV
29	4853624803	TERMINAL ANT	1	HIPSBK	
30	7122401411	SCREW TAPPING	4	T2S TRS 4X14 MFZN	C/B+M/F
31	4852132600	COVER BACK	1	FR HIPS BK	
32	4850A02510	ANT ROD	1	TSA-8108B L=600MM	
33	7122401411	SCREW TAPPING	1	T2S TRS 4X14 MFZN	C/B+FBT
34	4855418500	SPEC PLATE	1	150ART P/E FILM	
35	7122401411	SCREW TAPPING	3	T2S TRS 4X14 MFZN	C/B+TERM
36	4857817610	CLOTH BLACK	3	FELT T0.7 L=300	

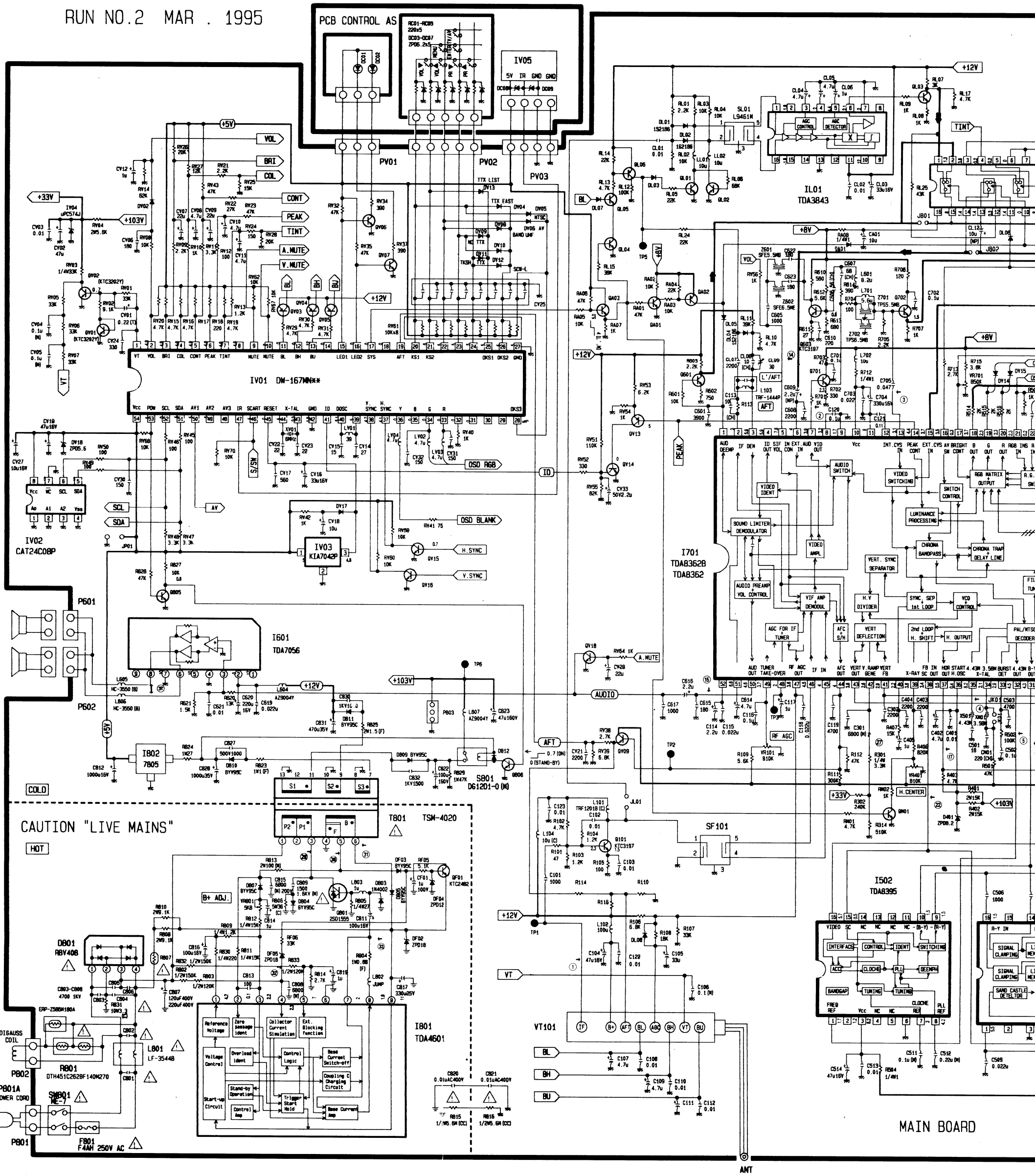
■ DTX-2195



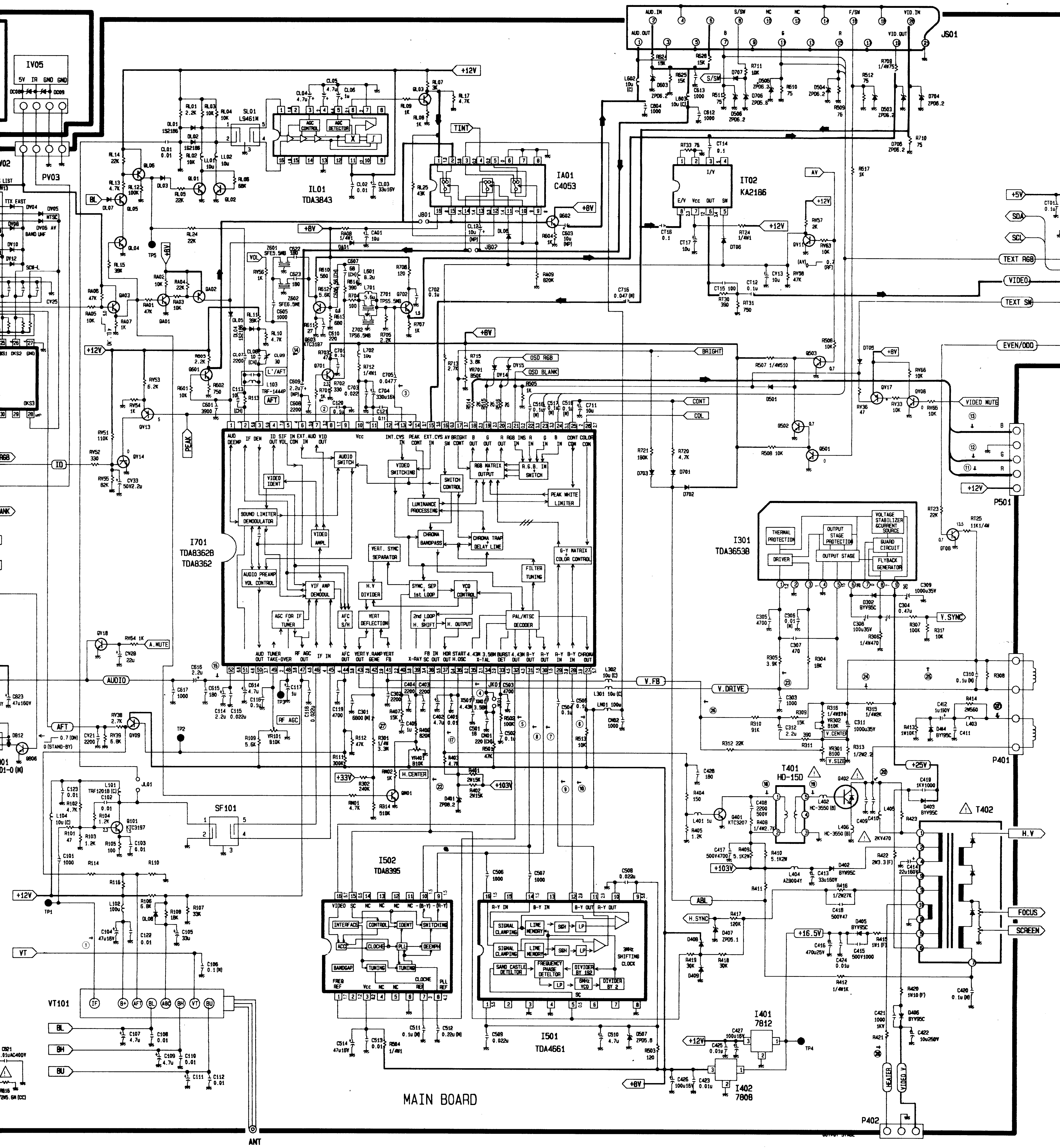
NO.	PART CODE	PART NAME	Q'TY	DESCRIPTION	REMARK
1	48525100	GRILL L	1	EGI T0.5+SPONGE	
2	4854836901	BUTTON POWER	1	ABS BK	
3	4856717900	SPRING	1	SWPA	
4	4855518501	DECO SENSOR	1	P.C SMOG	
5	4855617500	MARK BRAND	1	CU AU+ABS BK	
6	4852525000	GRILL R	1	EGI T0.5+SPONGE	
7	4852046501	MASK FRONT	1	HIPS BK	
8	4853311601	RETAINER BACK	2	HIPS NC	
9	4853525501	HOLDER CORD	1	HIPS GY	
10	4857528600	COVER SPKR	1	PVC T1.0	
11	4853414401	BRKT CRT	4	ABS NC	
12	7121401611	SCREW TAPPING	12	T2S PAN 4X16 MFZN	
13	4856215402	WASHER RUBBER	4	CR	
14	4856213200	WASHER CRT FIX	4	SK-5 8K T1.2	
15	7391500011	NUT HEX	4	6N-1-5 MFZN	
16	4851900120	GRILL GROUND AS	2	DS-W1007-RC5RCM	
17	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFNZ	
18	4854920801	BUTTON	1	ABS BK	
19	7128301011	SCREW TAPPING	3	T2S WAS 3X10 MFZN	
20	4852317602	A/V PANNEL	1	HIPS BK	
21	7128301011	SCREW TAPPING	8	T2S WAS 3X10 MFZN	
22		MAIN PCB AS	1		CP-330
23	4857025400	HEAT SINK	1	AL EX	
24	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
25	4856215200	WASHER	1	SPCC	
26	7392300011	NUT HEX	1	6N-2-3 MFZN	
27	4857024603	HEAT SINK	1	AL EX	
28	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
29	4856215200	WASHER	1	SPCC	
30	7392300011	NUT HEX	1	6N-2-3 MFZN	
31	4857415001	CLIP FUSE	2	PFC5000-0702	
32	4857621200	INSU COVER	1	PVC T1.0 94V-0	
33	4857024400	HEAT SINK	1	AL EX	
34	7271301011	SCREW TAPTITE	1	TT3 PAN 3X10 MFZN	
35	4857026900	HEAT SINK	1	AL EX	
36	7121260811	SCREW TAPPING	1	T2S PAN 3X8 MFZN	
37	4857024500	HEAT SINK	1	A1050P-H24 T2.0	
38	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
39	7392300011	NUT HEX	1	6N-2-3 MFZN	
40	4856215200	WASHER	1	SPCC	
41	4857024605	HEAT SINK	1	AL EX	
42	4856012310	SCREW SPECIAL	1	PAN 3X10 MFZN	
43	7392300011	NUT HEX	1	6N-2-3 MFZN (C/TV)	
44	4856215200	WASHER	1	SPCC	
45	4857026900	HEAT SINK	1	AL EX	
46	7121300811	SCREW TAPPING	1	T2S PAN 3X8 MFZN	
47	4857024900	HEAT SINK	1	AL EX	
48	7121301011	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
49	7128261011	SCREW TAPPING	2	T2S WAS 2.6X10 MFZN	
50	4853624803	TERMINAL ANT	1	HIPS BK	
51	4852134000	COVER BACK	1	FR HIPS BK	
52	4857817610	CLOTH BLACK	3	FELT T0.7 L-300	
53	7122401411	SCREW TAPPING	4	T2S TRS 4X14 MFZN	BC+MF
54	7122401411	SCREW TAPPING	1	T2S TRS 4X14 MFZN	BC+FBT
55	4855415800	SPEC PLATE	1	150ART P/E FILM	
56	7122401411	SCREW TAPPING	3	T2S TRS 4X14 MFZN	BC+TERM

CP-330 CHASSIS SHEMATIC DIAGRAM

RUN NO.2 MAR . 1995



CP330_M3_S M.5 SCHEM 2 Mar 1995



IV05
5V IR GND GND
PV03
IL01
TDA3843
AGC CONTROL
AGC DETECTOR
SL01
L9461M
IA01
C4053
IT02
KA2186
E/V Vcc OUT SW
JS01
AUD.IN
AUD.OUT
S/SW
NC
F/SW
VID.IN
VID.OUT
+12V
+8V
+5V
SDA
SCL
TEXT RGB
VIDEO
TEXT SW
EVEN/ODD
BRIGHT
OSD RGB
OSD BLANK
CONT
COL
VIDEO MUTE
TINT
AV
BL
VOL
PEAK
ID
AFT
AUDIO
A.MUTE
RF AGC
I701
TDA8362B
TDA8362
AUDIO SWITCH
VIDEO SWITCHING
RGB MATRIX + OUTPUT
R.G.B. IN + SWITCH
VIDEO IDENT
SWITCH CONTROL
PEAK WHITE LIMITER
SOUND LIMITER DEMODULATOR
LUMINANCE PROCESSING
VIDEO AMPL
CHROMA BANDPASS
CHROMA TRAP + DELAY LINE
VERT. SYNC SEPARATOR
G-Y MATRIX + COLOR CONTROL
AUDIO PREAMP + VOL CONTROL
VIF AMP + DEMODUL
H.V DIVIDER
SYNC. SEP 1st LOOP
VCO CONTROL
FILTER TUNING
AGC FOR IF + TUNER
AFC + S/H
VERT DEFLECTION
2nd LOOP + H. SHIFT
H. OUTPUT
PAL/NTSC DECODER
P501
I301
TDA3653B
THERMAL PROTECTION
OUTPUT STAGE PROTECTION
VOLTAGE STABILIZER &CURRENT SOURCE
GUARD CIRCUIT
DRIVER
OUTPUT STAGE
FLYBACK GENERATOR
V.SYNC
V.FB
V.DRIVE
V.CENTER
V.SIZE
P401
H.CENTER
+33V
+103V
+25V
T401
HD-15D
T402
H.V
FOCUS
SCREEN
ABL
H.SYNC
+16.5V
SF101
VT101
IF B+ AFT BL ABC BH VT BU
VT
BH
BU
ANT
I502
TDA8395
INTERFACE CONTROL IDENT SWITCHING
ACC CLOCHE PLL DEEMPH
BANDGAP TUNING TUNING
I501
TDA4661
SIGNAL CLAMPING
LINE MEMORY
S&H
LP
3MHz SHIFTING CLOCK
SAND CASTLE DETELTOR
FREQUENCY PHASE DETELTOR
DIVIDER BY 192
6MHz VCO
DIVIDER BY 2
I401
7812
I402
7808
HEATER
VIDEO V
P402
MAIN BOARD

JS01

IT01 SAA5280PE (WEST)
SAA5281PH (EAST)

IT02
KA2186

I301
TDA3653B

T401
HD-150

I401
7812

I402
7808

P501

P401

P402

T402

CRT
BOARD

TO P402

TO P501

CRT

REMOTE CONTROL R-22.23.25.26 (TYPE)

PCA84C122A

CHASSIS : CP - 330

SCHEMATIC DIAGRAM

* PAL - B/G
* PAL/SECAM - B/G, D/K
  NTSC - 3.58/4.43 (AV)
* PAL/SECAM - B/G, D/K
  SECAM - L
* PAL - I

RUN NO.2 MAR . 1995

NOTES :

1. THE UNITS OF RESISTANCE "OHM" IS OMITTED.
   (K = 1000 OHMS M = 1000000 OHMS)
2. ALL RESISTORS ARE 1/6 WATT UNLESS OTHERWISE NOTED.
3. CAPACITANCE VALUES 1.0 AND ABOVE ARE IN pF THOSE BELOW ARE IN uF EXCEPT AS INDICATED.
   (uF = 1000000 pF)
4. INDUCTOR VALUES ARE IN uH EXCEPT AS INDICATED.
5. ALL DIODE ARE 1N4148 EXCEPT AS INDICATED.
6. ALL NPN TRANSISTOR ARE KTC3198Y ALL PNP TRANSISTER ARE KTA1266Y EXCEPT AS INDICATED.
7. DC VOLTAGE AND AC WAVEFORM MEASUREMENT CONDITIONS.
   ALL THE VOLTAGES IN EACH POINT ARE MEASURED UNDER THE STANDARD COLOUR BAR SIGNAL INPUT (5 CHANNEL) AND ALL CONTROLS SET TO THE MAXIMUM POSITION.
   (DC VOLTAGES WITH VTVM AND AC WAVERFORMS WITH OSCILLOSCOPE)
   (FOR A NOMINAL LINE VOLTAGE ; AC 230V 50HZ)
8. SINCE THIS SCHEMATIC DIAGRAM IS A STANDARD ONE THE CIRCUIT AND CIRCUIT CONSTANTS MAY BE SUBJECT TO CHANGE FOR IMPROVEMENT WITHOUT ANY NOTICE.

SAFETY CAUTION :

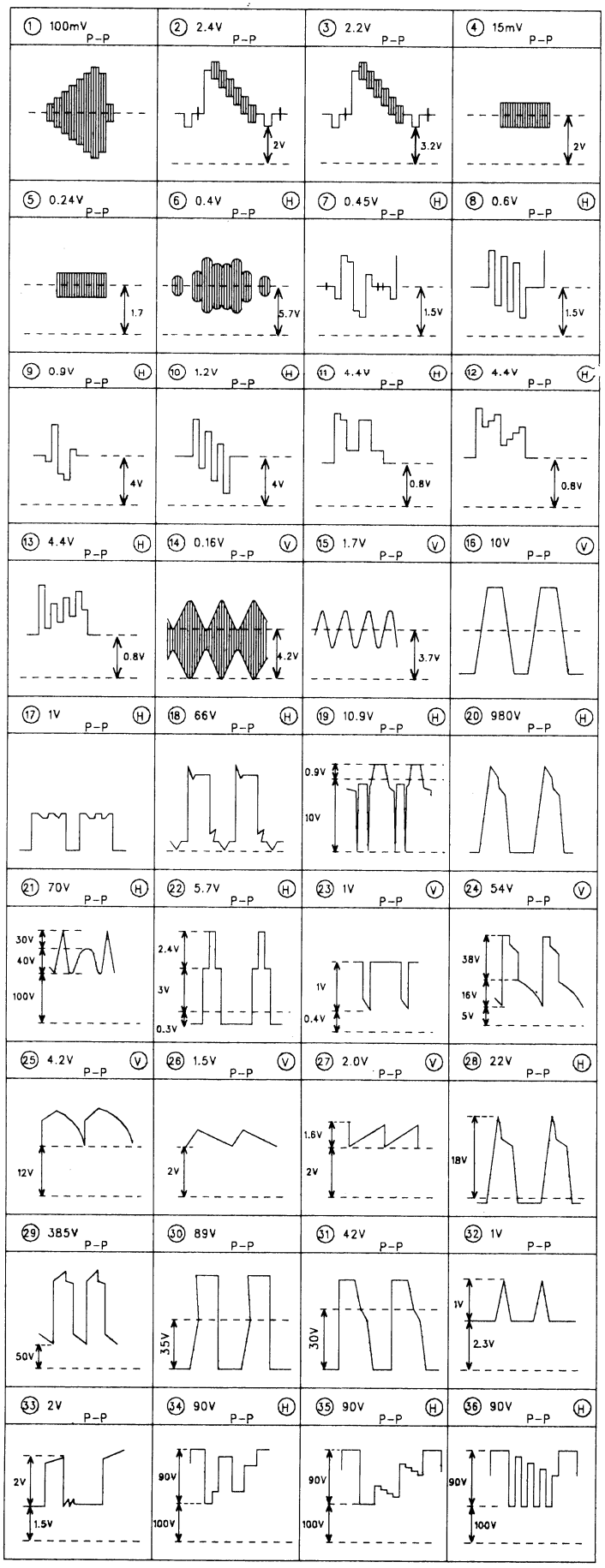
BEFORE SERVICING THIS CHASSIS IT IS IMPORTANT THAT THE SERVICE TECHNICIAN READ AND FOLLOW THE "X-RAY RADIATION PRECAUTION, "SAFETY PRECAUTIONS" AND "PRODUCT SAFETY NOTICE" IN THE SERVICE MANUAL.

PRODUCT SAFETY NOTE :

SHADED COMPONENTS ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET AND SHOULD BE REPLACED ONLY WITH TYPES IDENTICAL TO THOSE IN THE ORIGINAL OR SPECIFIED ONE IN THE PARTS LIST.
DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

WAVE FORMS

INPUT SIGNAL : PAL SYSTEM
VIDEO : 8 STEP COLOR BAR 87.5% AM
AUDIO : 1KHz SINE WAVE 60% FM



DIFFERENT PART FOR SYSTEM (

NO	LOC	P-B/G(FTZ) [TF]	P/S-B/G.D/K N-3/4 (AV) [TK]	P/S-B/G.D/K S-L/L' [VA]	P-I [TU]
1	VT101	TEKE4-073A	←	VTSS-7SZ3	DET-7BZ
2	SF101	G1966M	K2955M	←	J1953M
3	Z701	TPS5.5MB	←	←	TPS6.0MB
4	Z702		TPS6.5MB	←	
5	Z601	SFE5.5MB	←	←	SFE6.0MB
6	Z602		SFE6.5MB	←	
7	I502		TDA8395	←	
8	I701	TDA8362B	←	TDA8362	TDA8362B
9	P801A	CW-4232	KKP-419C	←	CW-3201
10	C105	10u	←	33u	10u
11	C107	4.7u	←	←	
12	C108	0.01	←	←	
13	C109	4.7u	←	←	
14	C110	0.01	←	←	
15	C111	4.7u	←	←	16V 100u
16	C801	200V 0.47	200V 0.1	←	←
17	C802	200V 0.47	200V 0.1	←	←
18	JB01	JUMPER	←	OPEN	JUMPER
19	JB02	JUMPER	←	OPEN	JUMPER
20	JK01	JUMPER	OPEN	JUMPER	←
21	R108	JUMPER	←	18K	JUMPER
22	R110	OPEN	←	100K	←
23	R113	470	←	220	470
24	R114	3.6M	←	←	100K
25	R116	OPEN	←	100K	←
26	R501	47K		47K	←
27	CA01		10u	←	
28	DA01		1N4148	←	
29	IA01		4053	←	
30	QA01		KTC3198Y	←	
31	QA02		KTA1266Y	←	
32	QA03		KTC3198Y	←	
33	RA01		47K	←	
34	RA02		10K	←	
35	RA03		10K	←	
36	RA04		22K	←	
37	RA05		10K	←	
38	RA06		47K	←	
39	RA07		1K	←	
40	RA08		1/4W1	←	
41	RA09		820K	←	
42	CL01			0.01	
43	CL02			0.01	
44	CL03			33u 16V	
45	CL04			4.7u	
46	CL05			4.7u	
47	CL06			1u	
48	CL07			2200	
49	CL08			10	
50	CL09			TZ03R300B	
51	CL12			25V 10u	
52	DL01			1S2186	
53	DL02			1S2186	
54	DL03			1N4148	
55	DL04			1S2186	
56	DL05			1N4148	
57	DL06			1N4148	
58	DL07			1N4148	
59	DL08			1N4148	
60	IL01			TDA3843	
61	JL01			JUMPER	
62	LL01			10uH	
63	LL02			10uH	
64	QL01			KTC3198Y	
65	QL02			KTC3198Y	
66	QL03			KTC3198Y	

DIFFERENT PART FOR SYSTEM (!)

NO	LOC	P-B/G(FTZ) [TF]	P/S-B/G.D/K N-3/4 (AV) [TK]	P/S-B/G.D/K S-L/L' [VA]	P-I [TU]	
1	VT101	TEKE4-073A	←	VTSS-7SZ3	DET-7BZ	
2	SF101	G1966M	K2955M	←	J1953M	
3	Z701	TPS5.5MB	←	←	TPS6.0MB	
4	Z702		TPS6.5MB	←		
5	Z601	SFE5.5MB	←	←	SFE6.0MB	
6	Z602		SFE6.5MB	←		
7	I502		TDA8395	←		
8	I701	TDA8362B	←	TDA8362	TDA8362B	
9	P801A	CW-4232	KKP-419C	←	CW-3201	
10	C105	10u	←	33u	10u	
11	C107	4.7u	←	←		
12	C108	0.01	←	←		
13	C109	4.7u	←	←		
14	C110	0.01	←	←		
15	C111	4.7u	←	←	16V 100u	
16	C801	200V 0.47	200V 0.1	←	←	
17	C802	200V 0.47	200V 0.1	←	←	
18	JB01	JUMPER	←	OPEN	JUMPER	
19	JB02	JUMPER	←	OPEN	JUMPER	
20	JK01	JUMPER	OPEN	JUMPER	←	
21	R108	JUMPER	←	18K	JUMPER	
22	R110	OPEN	←	100K	←	
23	R113	470	←	220	470	
24	R114	3.6M	←	←	100K	
25	R116	OPEN	←	100K	←	
26	R501	47K		47K	←	
27	CA01		10u	←		
28	DA01		1N4148	←		
29	IA01		4053	←		
30	QA01		KTC3198Y	←		
31	QA02		KTA1266Y	←		
32	QA03		KTC3198Y	←		
33	RA01		47K	←		
34	RA02		10K	←		
35	RA03		10K	←		
36	RA04		22K	←		
37	RA05		10K	←		
38	RA06		47K	←		
39	RA07		1K	←		
40	RA08		1/4W1	←		
41	RA09		820K	←		
42	CL01			0.01		
43	CL02			0.01		
44	CL03			33u 16V		
45	CL04			4.7u		
46	CL05			4.7u		
47	CL06			1u		
48	CL07			2200		
49	CL08			10		
50	CL09			TZ03R300B		
51	CL12			25V 10u		
52	DL01			1S2186		
53	DL02			1S2186		
54	DL03			1N4148		
55	DL04			1S2186		
56	DL05			1N4148		
57	DL06			1N4148		
58	DL07			1N4148		
59	DL08			1N4148		
60	IL01			TDA3843		
61	JL01			JUMPER		
62	LL01			10uH		
63	LL02			10uH		
64	QL01			KTC3198Y		
65	QL02			KTC3198Y		
66	QL03			KTC3198Y		

NO	LOC	P-B/G(FTZ) [TF]	P/S-B/G.D/K N-3/4 (AV) [TK]	P/S-B/G.D/K S-L/L' [VA]	P-I [TU]	
67	QL04			KTC3198Y		
68	QL05			KTC3198Y		
69	QL06			KTC3198Y		
70	SL01			L9461M		
71	RL01			2.2K		
72	RL02			10K		
73	RL03			10K		
74	RL04			10K		
75	RL05			22K		
76	RL06			68K		
77	RL07			3K		
78	RL08			1K		
79	RL09			1K		
80	RL10			4.7K		
81	RL11			39K		
82	RL12			100K		
83	RL13			4.7K		
84	RL14			22K		
85	RL15			39K		
86	RL17			4.7K		
87	RL24			22K		
88	RL25			43K		
89	CN01		220			
90	CN02		1000			
91	LN01		100uH			
92	QN01		KTC3198Y			
93	RN01		47K			
94	RN02		1K	OPEN		
95	XN01		3.58MHz			
96	DV04		1N4148			
97	DV05		1N4148			
98	DV08				1N4148	
99	DV09			1N4148		
100	DV12			1N4148		
101	DV13	1N4148		1N4148		
102	QV03	KTA1266Y	←	←		
103	QV04	KTA1266Y	←	←		
104	RV29	4.7K	←	←		
105	RV30	4.7K	←	←		
106	DT05	1N4148	←		1N4148	
107	IT01	SAA5281PE	SAA5281PH		SAA5281PE	
108	IT02	KA2186	←		KA2186	
109	XT01	27MHz	←		27MHz	
110	F801C				FUSE COVER	
111	LA02				CRT BS LABEL	
112	M511	SHIELD CASE				
113	M512A	SHIELD PLATE				
114	PA01A		CONN WAFER	←		
115	PA01B		CONN AS	←		
116	P805	TUNER GND AS				
117	Q801L				LABEL WARNING	

DIFFERENT PART FOR

NO.	LOC.	14"		
1	CRT	ORION	PHILIPS	A
		A34JLL90X	A34EAC01X06	
2	CRT SOCKET	ISM-01	←	CT
3	D/COIL	DC-1450	←	
4	T402	DCF2077D	FSA2400BS	1
5	C409	1.6KV 6000	1.6KV 6200	1.
6	C410	2KV 470	2KV 680	2
7	C411	200V 0.47u	200V 0.51u	
8	C412	160V 3.3u	160V 1u	
9	L403	L-125	L-102	L
10	L405	AZ-9004Y	←	
11	R308	2W 270	2W 120	
12	R411	1/2W 110K	←	
13	R421	1W 5.6 (F)	1W 3.9 (F)	1
14	R423	2W 56	←	
15	R501	2W 9.1K	←	
16	R511	2W 9.1K	←	
17	R521	2W 9.1K	←	
18	R525	220	120	
19	RV09	2.2K	←	
20	RV17	11K	←	
21	P401	YFW500-05	YFW500-06	
22	R801	901P44E 180YR16	←	

DIFFERENT PART FOR

NO.	LOC.	230V 50HZ	110-260V 50/60H
1	T801	TSM-4020	
2	C807	150u 400V	220u 400V
3	DF03	——	BYV95C
4	RF05	——	5.1K
5	DF04	——	ZPD12
6	CF01	——	1u 160V
7	QF01	——	KTC3207
8	DF05	——	ZPD18
9	RF06	——	33K
10	RB12	1/4W 15K	1/4W 13K
11	RB14	1/4W 2.7K	

DIFFERENT PART FOR

NO.		1SPK (2W)	2SPK
1	SPK	8 ohm	1
2	SPK	-	1
3	R620	13	

CAPACITOR

ELECTRO	—+|(—
CERAMIC	—||—
CERAMIC CH	—||— (CH)
TANTAL	—+|(— (T)
ELECTRO NONPOLAR	—||— (NP)
MYLAR	—||— (M)

RE

NO	LOC	P-B/G(FTZ) [TF]	P/S-B/G.D/K N-3/4 (AV) [TK]	P/S-B/G.D/K S-L/L' [VA]	P-I [TU]	
67	QL04			KTC319BY		
68	QL05			KTC319BY		
69	QL06			KTC319BY		
70	SL01			L9461M		
71	RL01			2.2K		
72	RL02			10K		
73	RL03			10K		
74	RL04			10K		
75	RL05			22K		
76	RL06			68K		
77	RL07			3K		
78	RL08			1K		
79	RL09			1K		
80	RL10			4.7K		
81	RL11			39K		
82	RL12			100K		
83	RL13			4.7K		
84	RL14			22K		
85	RL15			39K		
86	RL17			4.7K		
87	RL24			22K		
88	RL25			43K		
89	CN01		220			
90	CN02		1000			
91	LN01		100uH			
92	QN01		KTC3198Y			
93	RN01		47K			
94	RN02		1K	OPEN		
95	XN01		3.58MHz			
96	DV04		1N4148			
97	DV05		1N4148			
98	DV08				1N4148	
99	DV09			1N4148		
100	DV12			1N4148		
101	DV13	1N4148		1N4148		
102	QV03	KTA1266Y	←	←		
103	QV04	KTA1266Y	←	←		
104	RV29	4.7K	←	←		
105	RV30	4.7K	←	←		
106	DT05	1N4148	←		1N4148	
107	IT01	SAA5281PE	SAA5281PH		SAA5281PE	
108	IT02	KA2186	←		KA2186	
109	XT01	27MHz	←		27MHz	
110	F801C				FUSE COVER	
111	LA02				CRT BS LABEL	
112	M511	SHIELD CASE				
113	M512A	SHIELD PLATE				
114	PA01A		CONN WAFER	←		
115	PA01B		CONN AS	←		
116	P805	TUNER GND AS				
117	Q801L				LABEL WARNING	

DIFFERENT PART FOR SIZE

NO.	LOC.	14"			20"			21"		
1	CRT	ORION	PHILIPS	POLKOLOR	ORION	SAMSUNG	POLKOLOR	ORION	PHILIPS	SAMSUNG
		A34JLL90X	A34EAC01X06	A33EFU13X01	A48JLL90X	A48ECR11X16	A48EEV33X01	A51JSW90X	A51EAL55X01	A51EER11X40
2	CRT SOCKET	ISM-01	←	CTV3240-0501	ISM-03	CTV3240-0501	←	ISM-03	CTV3240-0501	←
3	D/COIL	DC-1450	←	←	DC-2050	←	←	DC-2070	←	←
4	T402	DCF2077D	FSA2400BS	1142.5025B	DCF-2217J	FSA-17013M	FSA26012M	DCF-2217L	FSA-17013M	FSA-17013M
5	C409	1.6KV 6000	1.6KV 6200	1.6KV 6000	1.6KV 6900	1.6KV 8200	←	1.6KV 7500	1.6KV 8200	
6	C410	2KV 470	2KV 680	2KV 220	2KV 470	2KV 1000		2KV 470	←	
7	C411	200V 0.47u	200V 0.51u	←	200V 0.47u	200V 0.51u	←	200V 0.33u	200V 0.47u	
8	C412	160V 3.3u	160V 1u	←	160V 3.3u	160V 1u	←	160V 3.3u	160V 1u	
9	L403	L-125	L-102	L-76	L-102	L-62	L-76	L-102	L-76	
10	L405	AZ-9004Y	←	←	AZ-9004Y	JUMPER	←	AZ-9004Y	JUMPER	
11	R308	2W 270	2W 120	←	2W 270	←	←	2W 270	←	
12	R411	1/2W 110K	←	←	1/2W 160K	←	←	←	←	
13	R421	1W 5.6 (F)	1W 3.9 (F)	1W 0.68 (F)	1W 6.2 (F)	2W 2.7 (F)	2W 2.4 (F)	1W 6.2 (F)	1W 6.8 (F)	
14	R423	2W 56	←	←	2W 56	JUMPER	←	2W 56	JUMPER	
15	R501	2W 9.1K	←	←	2W 12K	←	←	←	←	
16	R511	2W 9.1K	←	←	2W 12K	←	←	←	←	
17	R521	2W 9.1K	←	←	2W 12K	←	←	←	←	
18	R525	220	120	←	220	120	←	220	120	
19	RV09	2.2K	←	←	2.7K	←	←	←	←	
20	RV17	11K	←	←	4.7K	←	←	←	←	
21	P401	YFW500-05	YFW500-06	←	YFW500-05	YFW500-06	←	YFW500-06	←	
22	R801	901P44E 180YR16	←	←	←	←	←	DTH451C262 BF140M270		

DIFFERENT PART FOR SMPS (OPTION)

NO.	LOC.	230V 50HZ	110-260V 50/60Hz
1	T801	TSM-4020	
2	C807	150u 400V	220u 400V
3	DF03	——	BYV95C
4	RF05	——	5.1K
5	DF04	——	ZPD12
6	CF01	——	1u 160V
7	QF01	——	KTC3207
8	DF05	——	ZPD18
9	RF06	——	33K
10	RB12	1/4W 15K	1/4W 13K
11	RB14	1/4W 2.7K	

DIFFERENT PART FOR SPEAKER (OPTION)

NO.		1SPK (2W)	2SPK(2W + 2W)
1	SPK	8 ohm	16 ohm
2	SPK	-	16 ohm
3	R620	13K	7.5K

CAPACITOR

ELECTRO	
CERAMIC	
CERAMIC CH	(CH)
TANTAL	(T)
ELECTRO NONPOLAR	(NP)
MYLAR	(M)

RESISTOR

CARBON FILM	
M-OXIDE FILM	(M)
CARBON COMP	(CC)
FUSIBLE	(F)
CEMENT	(C)

COIL

PEAKING	
CHOKE	(C)
BEAD	(B)